

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



NOTICE OF APPLICATION AND PRELIMINARY DECISION FOR WATER QUALITY TPDES PERMIT AMENDMENT FOR INDUSTRIAL WASTEWATER

PERMIT NO. 02496

APPLICATION AND PRELIMINARY DECISION. Southwestern Electric Power Company, 2400 Farm-to-Market Road 3251, Hallsville, Texas 75650-7634, which operates the Henry W. Pirkey Power Plant, has applied to the Texas Commission on Environmental Quality (TCEQ) for a major amendment to TPDES Permit No. 02496 to authorize removal of monitoring requirements for total dissolved solids at Outfall 002; removal of effluent limitations and monitoring requirements for oil and grease at Outfalls 003, 004, and 005; a reduction in monitoring frequencies for total suspended solids at Outfalls 102, 302, 003, 004, 005, and 006; a reduction in monitoring frequency for oil and grease at Outfalls 102 and 006; and removal of biomonitoring requirements at Outfalls 102 and 006. The current permit authorizes the discharge of condenser cooling water and previously monitored effluent (low volume wastewater via internal Outfall 102, plant "X" treated effluent including metal cleaning wastes, chemical metal cleaning wastes, low volume wastes, coal pile runoff, and ash transport water via internal Outfall 202, and domestic wastewater via internal Outfall 302) at a daily average flow not to exceed 600,000,000 gallons per day via Outfall 002; storm water from the lignite storage area runoff pond on an intermittent and flow variable basis via Outfall 003; storm water runoff from the flue gas desulfurization (FGD)/fly ash sludge landfill on an intermittent and flow variable basis via Outfall 004; storm water from the limestone storage area runoff pond on an intermittent and flow variable basis via Outfall 005; and commingled wastewaters from the ash pond on an intermittent and flow variable basis via Outfall 006. This application was submitted to the TCEQ on September 23, 2002.

The facility is located adjacent to Red Oak Road at a point approximately six miles southeast of the City of Hallsville, Harrison County, Texas. The effluent is discharged via Outfalls 002 and 003, to Brandy Branch Reservoir; thence to Brandy Branch Creek; thence to the Sabine River Above Toledo Bend Reservoir in Segment 0505 of the Sabine River Basin; and via Outfalls 004, 005, and 006 to unnamed tributaries of Hatley Creek; thence to Hatley Creek; thence to the Sabine River Above Toledo Bend Reservoir, in Segment No. 0505 of the Sabine River Basin. The unclassified receiving waters have no significant aquatic life use for the unnamed tributaries of Hatley Creek and Brandy Branch Creek; and high aquatic life use for Hatley Creek and Brandy Branch Reservoir. The designated uses for Segment No. 0505 are high aquatic life use, contact recreation, and public water supply. No significant degradation of high quality receiving waters is anticipated.

The TCEQ executive director has completed the technical review of the application and prepared a draft permit. The draft permit, if approved, would establish the conditions under which the facility must operate. The executive director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The permit application, executive director's preliminary decision (as contained in the technical summary and/or fact sheet), and draft permit are available for viewing and copying at the Marshall Public Library, 300 South Alamo Street, Marshall, Texas.

PUBLIC COMMENT / PUBLIC MEETING. You may submit public comments or request a public meeting about this application. The purpose of a public meeting is to provide the opportunity to submit written or oral comment or to ask questions about the application. Generally, the TCEQ will hold a public meeting if the executive director determines that there is a significant degree of public interest in the application or if requested by a local legislator. A public meeting is not a contested case hearing.

Written public comments and requests for a public meeting should be submitted to the Office of the Chief Clerk, MC 105, TCEQ, P.O. Box 13087, Austin, TX 78711-3087 within 30 days of the date of newspaper publication of this notice.

OPPORTUNITY FOR A CONTESTED CASE HEARING. After the deadline for public comments, the executive director will consider the comments and prepare a response to all relevant and material, or significant public comments. The response to comments, along with the executive director's decision on the application, will be mailed to everyone who submitted public comments or who requested to be on a mailing list for this application. If comments are received, the mailing will also provide instructions for requesting a contested case hearing or reconsideration of the executive director's decision. A contested case hearing is a legal proceeding similar to a civil trial in a state district court.

A contested case hearing will only be granted based on disputed issues of fact that are relevant and material to the Commission's decision on the application. Further, the Commission will only grant a hearing on issues that were raised during the public comment period and not withdrawn. Issues that are not raised in public comments may not be considered during a hearing.

EXECUTIVE DIRECTOR ACTION. The executive director may issue final approval of the application unless a timely contested case hearing request or a timely request for reconsideration is filed. If a timely hearing request or request for reconsideration is filed, the executive director will not issue final approval of the permit and will forward the application and requests to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

MAILING LISTS. In addition to submitting public comments, you may ask to be placed on a mailing list to receive future public notices mailed by the Office of the Chief Clerk. You may request to be added to: (1) the mailing list for this specific application; (2) the permanent mailing list for a specific applicant name and permit number; and/or (3) the permanent mailing list for a specific county. Clearly specify which mailing list(s) to which you wish to be added and send your request to the TCEQ Office of the Chief Clerk at the address above. Unless you otherwise specify, you will be included only on the mailing list for this specific application.

INFORMATION. If you need more information about this permit application or the permitting process, please call the TCEQ Office of Public Assistance, Toll Free, at 1-800-687-4040. General information about the TCEQ can be found at our web site at www.tceq.state.tx.us.

Further information may also be obtained from Southwestern Electric Power Company at the address stated above or by calling Mr. Franklin Mills, American Electric Power at (214) 777-1507.

Issued:

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

For proposed Texas Pollutant Discharge Elimination System (TPDES) Permit No. 02496 (TX0087726) to discharge to water in the state.

Issuing Office: Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Applicant: Southwestern Electric Power Company
2400 Farm-to-Market Road 3251
Hallsville, Texas 75650-7634

Prepared By: Kimberly Wilson
Wastewater Permitting Section
Water Quality Division
(512) 239-4644

Date: April 30, 2003

Permit Action: Amendment; TPDES Permit No. 02496

I. EXECUTIVE DIRECTOR RECOMMENDATION

The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. It is proposed the permit be issued to expire on April 1, 2006 in accordance with 30 TAC § 305.71, Basin Permitting.

II. APPLICANT ACTIVITY

The applicant currently operates from the Henry W. Pirkey Power Plant, a steam electric power generation facility.

III. DISCHARGE LOCATION

The facility is located adjacent to Red Oak Road at a point approximately six miles southeast of the City of Hallsville, Harrison County, Texas. The effluent is discharged via Outfalls 002 and 003, to Brandy Branch Reservoir; thence to Brandy Branch Creek; thence to the Sabine River Above Toledo Bend Reservoir in Segment 0505 of the Sabine River Basin; and via Outfalls 004, 005, and 006 to unnamed tributaries of Hatley Creek; thence to Hatley Creek; thence to the Sabine River Above Toledo Bend Reservoir, in Segment No. 0505 of the Sabine River Basin.

IV. RECEIVING STREAM USES

The unclassified receiving waters have no significant aquatic life use for the unnamed tributaries of Hatley Creek and Brandy Branch Creek; and high aquatic life use for Hatley Creek and Brandy Branch Reservoir. The designated uses for Segment No. 0505 are high aquatic life use, contact recreation, and public water supply.

Segment No. 0505 is water quality limited.

V. STREAM STANDARDS

The general criteria and numerical criteria which make up the stream standards are provided in the Texas Administrative Code, 30 TAC §307.1 - §307.10, effective April 30, 1997.

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VI. DISCHARGE DESCRIPTION

The following is a quantitative description of the discharge described in the Monthly Effluent Report data for the period January 2001 through January 2003. The "Average of Daily Avg." values presented in the following table are the average of all daily average values for the reporting period for each parameter. The "Maximum of Daily Max." values presented in the following table are the individual maximum values for the reporting period for each parameter:

A. Flow

<u>Outfall</u>	<u>Frequency</u>	<u>Average of Daily Avg (MGD)</u>	<u>Maximum of Daily Max (MGD)</u>
002	Continuous	432.0	544.3
102	Intermittent	21.78	33.12
202	Continuous	No discharge during period of record.	
302	Continuous	0.0028	0.0072
003	Intermittent	No discharge during period of record.	
004	Intermittent	1.17	3.0
005	Intermittent	0.65	2.2
006	Intermittent	1.23	3.9

B. Temperature (degrees F)

<u>Outfall</u>	<u>Daily Avg.</u>	<u>Daily Max.</u>
002	92.17	117

C. Effluent Characteristics

<u>Outfall</u>	<u>Parameter</u>	<u>Average of Daily Avg.</u>	<u>Maximum of Daily Max.</u>
002	Total Dissolved Solids	625,475.8 lbs/day	1,361,900 lbs/day
	Total Residual Chlorine	N/A	0.2 mg/L
		N/A	37.8 lbs/day
102	Total Suspended Solids	1.33 mg/L	1.33 mg/L
	Oil and Grease	0 mg/L	0 mg/L
	Selenium, total	0.0055 mg/L	0.006 mg/L
	pH	6.9 S.U. (min)	8.8 S.U. (max)
302	Biochemical Oxygen Demand (5-day)	7.3 mg/L	12 mg/L
	Total Suspended Solids	12.08 mg/L	24.0 mg/L
	Total Residual Chlorine	1.0 mg/L (min)	4.1 mg/L (max)
		1.8 mg/L	N/A
	pH	6.5 S.U. (min)	8.1 S.U. (max)

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<u>Outfall</u>	<u>Parameter</u>	<u>Average of Daily Avg.</u>	<u>Maximum of Daily Max.</u>
004	Total Suspended Solids	N/A	78 mg/L
	Oil and Grease	N/A	0 mg/L
	Selenium, total	N/A	0.035 mg/L
	pH	6.5 S.U. (min)	7.2 S.U. (max)
005	Total Suspended Solids	N/A	33 mg/L
	Oil and grease	N/A	0 mg/L
	pH	6.8 S.U. (min)	7.8 S.U. (max)
006	Total Suspended Solids	7.48 mg/L	37 mg/L
	Oil and Grease	0 mg/L	0 mg/L
	Selenium, total	0.008 mg/L	0.009 mg/L
	pH	6.0 S.U. (min)	8.6 S.U. (max)

A review of the self report data summarized above indicates the permittee is consistently in compliance with effluent limitations established in the current permit.

VII. PROPOSED EFFLUENT LIMITATIONS

The draft permit authorizes the discharges of once through cooling water and previously monitored effluents at a daily average flow not to exceed 600 MGD and a daily maximum flow not to exceed 600 MGD via Outfall 002; low volume wastewater on an intermittent and flow variable basis via Outfall 102; Plant "X" treated effluent (metal cleaning waste, chemical metal cleaning waste, low volume waste, coal pile runoff, and ash transport water) at a daily average flow not to exceed 0.8 MGD via Outfall 202; domestic wastewater at a daily average flow not to exceed 0.015 MGD and a daily maximum flow not to exceed 0.30 MGD via Outfall 302; wastewater from the Lignite Runoff Pond on an intermittent and flow variable basis via Outfall 003; wastewater from the Flue Gas Desuphurization/Fly Ash Landfill Retention Pond on an intermittent and flow variable basis via Outfall 004; wastewater from the Limestone Runoff Pond on an intermittent and flow variable basis via Outfall 005; and wastewater from the Ash Pond on an intermittent and flow variable basis via Outfall 006.

Final effluent limitations are established in the draft permit as follows:

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
002	Flow (MGD)	(600)	(600)
	Temperature (°F)	(Report)	(122)
	Total Residual Chlorine	N/A	0.2 mg/L
		N/A	75.6 lbs/day
102	Flow (MGD)	(Report)	(Report)
	Total Suspended Solids	30 mg/L	100 mg/L
	Oil and Grease	15 mg/L	20 mg/L
	Selenium, Total	0.012 mg/L	0.025 mg/L
	pH	Between 6.0 and 9.0 standard units	

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<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
202	Flow (MGD)	(0.8)	(0.8)
	Total Suspended Solids	30 mg/L	100 mg/L
	Oil and Grease	15 mg/L	20 mg/L
	Selenium, Total	0.016 mg/L	0.033 mg/L
	Iron, Total	1.0 mg/L	1.0 mg/L
	Copper, Total	0.5 mg/L	1.0 mg/L
	pH	Between 6.0 and 9.0 standard units	
302	Flow (MGD)	(0.015)	(0.030)
	Biochemical Oxygen	20 mg/L	65 mg/L
	Demand (5-day)	2.5 lbs/day	N/A
	Total Suspended Solids	20 mg/L	65 mg/L
		2.5 lbs/day	N/A
	Total Residual Chlorine	1.0 mg/L (min)	Report mg/L (max)
	pH	Between 6.0 and 9.0 standard units	
003	Flow (MGD)	(Report)	(Report)
	Total Suspended Solids	N/A	50 mg/L
	Oil and Grease	N/A	20 mg/L
	Selenium, Total	N/A	0.033 mg/L
	pH	Between 6.0 and 9.0 standard units	
004	Flow (MGD)	(Report)	(Report)
	Total Suspended Solids	N/A	100 mg/L
	Oil and Grease	N/A	20 mg/L
	Selenium, Total	N/A	0.036 mg/L
	pH	Between 6.0 and 9.0 standard units	
005	Flow (MGD)	(Report)	(Report)
	Total Suspended Solids	N/A	50 mg/L
	Oil and Grease	N/A	20 mg/L
	pH	Between 6.0 and 9.0 standard units	
006	Flow (MGD)	(Report)	(Report)
	Total Suspended Solids	30 mg/L	100 mg/L
	Oil and Grease	15 mg/L	20 mg/L
	Selenium, total*	0.017 mg/L	0.036 mg/L
	Selenium, total**	0.006 mg/L	0.013 mg/L
	pH	Between 6.0 and 9.0 standard units	

* Effluent limitations effective beginning upon date of issuance and lasting 2 years, 364 days.

** Effluent limitations effective beginning 2 years, 365 days from issuance, and lasting through date of expiration.

Chronic and acute biomonitoring requirements are included in the draft permit at Outfall 002 based upon recommendations from the Water Quality Assessment Team in TCEQ Interoffice Memorandum dated May 5, 2003.

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Effluent limitations and/or monitoring requirements for flow at Outfalls 002, 102, 202, 302, 003, 004, 005, and 006 are established based upon best professional judgement and are continued in the draft permit.

Monitoring requirements for total dissolved solids at Outfall 002 have not been continued in the draft permit. See "Summary of Changes From Application," below.

Effluent limitations for total selenium are included at Outfalls 102, 202, 003, 004, and 006 based on best professional judgment and the use of lignite as fuel. Effluent limitations for total selenium have been revised at Outfall 006 in accordance with the calculated water quality based effluent limitations in Appendix B of this permit. See Part X.D.2 and Appendix B of this fact sheet for additional information. Effluent limitations for Outfalls 102, 202, and 003 have been continued from the existing permit. See "Summary of Changes From Application," below.

Effluent limitations for oil and grease at Outfalls 003, 004, and 005 are continued from the existing permit and are based on best professional judgement. See "Summary of Changes From Application," below.

Effluent limitations for total suspended solids at Outfall 004 are established based on best professional judgment, as 40 CFR Part 423 does not apply. All other effluent limitations at Outfalls 002, 102, 202, 003, 005, and 006 are continued from the existing permit and are consistent with 40 CFR Part 423.

Effluent limitations for Outfall 302 are continued from the existing permit and are established consistent with 30 TAC 309.

VIII. SUMMARY OF CHANGES FROM APPLICATION

The applicant has requested the following amendments to the current permit:

1. *Removal of monitoring requirements for total dissolved solids at Outfall 002.* The permittee supports this amendment request citing that the discharge at Outfall 002 consists of once through cooling water, and the monitoring results are essentially reflective of total dissolved solids levels in Brandy Branch Reservoir (source water and immediate receiving waters). The Executive Director is in agreement with the permittee's position with regard to this amendment request, and recommends its approval.
2. *Removal of effluent limitations and monitoring requirements for oil and grease at Outfalls 003, 004, and 005.* The permittee supports this amendment request by citing that Outfalls 003, 004, and 005 are all outfalls associated with waste management ponds that collect wastewater from non-process, product, or waste storage areas and discharges from these outfalls are unlikely to be susceptible to oil and grease contamination. Further the permittee asserts that federal categorical effluent limitations found in 40 CFR Part 423 are not applicable to the discharges at Outfalls 003, 004, and 005. The permittee has been compliant with the oil and grease limitations in the current permit, and in most sampling events have had non-detect results for oil and grease.

The Executive Director has not recommended approval of this amendment request, as it does not meet exemption requirements under 40 CFR, Part 122.44(l), Antibacksliding. The permittee has demonstrated through the facility's compliance with oil and grease effluent limitations at Outfalls 003, 004, and 005 that oil and grease should not be a pollutant of concern at these outfalls. Based on the compliance history, the Executive Director has recommended a reduction in the monitoring frequency for oil and grease at Outfalls 003, 004, and 005 to once per year.

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- ✓ 3. *A reduction in monitoring frequencies for total suspended solids at Outfalls 003, 302, 004, and 005.* The permittee supports this amendment request by citing the exemplary compliance history for total suspended solids at Outfalls 003, 302, 004, and 005. Additionally, the permittee supports the request for a reduction in monitoring frequency at Outfall 003 by citing the infrequent nature of discharges at Outfall 003. Recognizing the compliance history for these pollutants at Outfalls 003, 302, 004, and 005, the Executive Director has recommended approval of this amendment request. Monitoring frequencies for total suspended solids at Outfalls 003, 004, and 005 have been reduced from once week to once month. Monitoring frequencies for total suspended solids at Outfall 302 have been reduced from twice per month to once per two months.
- ✓ 4. *A reduction in monitoring frequencies for total suspended solids and oil and grease at Outfalls 102 and 006.* The permittee supports this amendment request by citing the exemplary compliance history for total suspended solids and oil and grease at Outfalls 102 and 006. Recognizing the compliance history for these pollutants at Outfalls 102 and 006, the Executive Director has recommended approval of this amendment request. Monitoring frequencies for total suspended solids and oil and grease at Outfall 102 have been reduced from once per two months to once per quarter. Monitoring frequencies for total suspended solids and oil and grease at Outfall 006 have been reduced from once per week to once per month.
5. *Removal of biomonitoring requirements at Outfalls 102 and 006.* The permittee supports this amendment request by citing the exemplary compliance history for biomonitoring at both Outfalls 102 and 006. The TCEQ has recommended removing 24-hour acute testing requirements, since neither outfall discharges continuously nor discharges process-treated wastewater. Furthermore, Outfall 102 is an internal outfall, where biomonitoring is not typically applied.

The following other changes have been made in the draft permit:

1. The current permit includes effluent limitations for total selenium at Outfall 006. Calculated water quality based effluent limitations in Appendix B for Outfall 006 are more stringent than those established in the current permit. The draft permit includes revised effluent limitations for total selenium at Outfall 006. A three year compliance period has been established for total selenium at Outfall 006. See Part X.D.2 and Appendix B of this fact sheet for additional discussion.
2. The daily average effluent limitation for total copper at Outfall 202 was revised in accordance with 30 TAC 319.
3. Effluent limitations for total residual chlorine at Outfall 302 have been revised. The permittee is now required to meet a 1.0 mg/L minimum and report (mg/L) the daily maximum total chlorine residual.

See the next section for additional changes to the existing permit.

IX. SUMMARY OF CHANGES FROM EXISTING PERMIT

Changes from the existing permit consist of the following items:

1. Waste stream descriptions on pages 2, 2d, 2e, 2f, and 2g of the permit have been revised. The existing descriptions reference only storm water discharges from the Lignite Runoff Pond, Flue Gas Desuphurization/Fly Ash Landfill Retention Pond, Limestone Runoff Pond, and Ash Pond.

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Sabine River Basin; and via Outfalls 004, 005, and 006 to unnamed tributaries of Hatley Creek; thence to Hatley Creek; thence to the Sabine River Above Toledo Bend Reservoir, Segment No. 0505 of the Sabine River Basin. The unclassified receiving waters have no significant aquatic life use for the unnamed tributaries of Hatley Creek and Brandy Branch Creek; and high aquatic life use for Hatley Creek and Brandy Branch Reservoir. The designated uses for Segment No. 0505 are high aquatic life use, contact recreation, and public water supply. Effluent limitations and/or conditions established in the draft permit are in compliance with state water quality standards and the applicable water quality management plan. The effluent limits in the draft permit will maintain and protect the existing instream uses. No significant degradation of high quality receiving waters is anticipated. Additional discussion of the water quality aspects of the draft permit will be found at Section X.D. of this fact sheet.

There is no priority watershed of critical concern with respect to endangered and threatened species in Segment No. 0505 in Harrison County. Therefore, no endangered or threatened aquatic or aquatic dependent species (including proposed species) occur in this area. This determination was made by referencing Appendix A of the U.S. Fish and Wildlife Service biological opinion, dated September 14, 1998, on the State of Texas authorization of the Texas Pollutant Discharge Elimination System.

Segment No. 0505 is currently listed on the State's inventory of impaired and threatened waters (the Clean Water Act Section 303(d) list). The fish consumption use is not supported in Brandy Branch Reservoir, based on a non-consumption advisory issued for sensitive subpopulations by the Texas Department of Health in May 1992 due to elevated concentrations of selenium in fish tissue. Outfalls 002, 102, 302, and 003 discharge to Brandy Branch Reservoir. Outfalls 004 and 006 discharge to unnamed tributaries of Hatley Creek. Outfalls 002, 102, 202, and 003 include effluent limitations and or monitoring requirements for total selenium. Additionally, the current and draft permits require the permittee to implement a Selenium Monitoring Program. The draft permit recommends the effluent limitations and/or monitoring requirements for total selenium Outfalls 002, 102, 202, and 003, and the Selenium Monitoring Program be extended through the term of the permit to allow further evaluation of impact to selenium impairments.

C. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS1. GENERAL COMMENTS

Regulations promulgated in Title 40 of the Code of Federal Regulations require technology-based limitations be placed in wastewater discharge permits based on effluent limitations guidelines, where applicable, and/or on best professional judgment (BPJ) in the absence of guidelines.

The draft permit authorizes the discharges of once through cooling water and previously monitored effluents at a daily average flow not to exceed 600 MGD and a daily maximum flow not to exceed 600 MGD via Outfall 002; low volume wastewater on an intermittent and flow variable basis via Outfall 102; Plant "X" treated effluent (metal cleaning waste, chemical metal cleaning waste, low volume waste, coal pile runoff, and ash transport water) at a daily average flow not to exceed 0.8 MGD via Outfall 202; domestic wastewater at a daily average flow not to exceed 0.015 MGD and a daily maximum flow not to exceed 0.30 MGD via Outfall 302; wastewater from the Lignite Runoff Pond on an intermittent and flow variable basis via Outfall 003; wastewater from the Flue Gas

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These discharges consist of runoff from material/waste storage piles and the waste stream descriptions have been revised to reflect such.

2. The "Definitions and Standard Permit Conditions," "Other Requirements," and "Biomonitoring" sections of this permit have been updated based on current TCEQ practices and policies.
3. Other Requirement No. 6 describing the wastes discharged to Plant "X" was added to the draft permit.
4. Other Requirement No. 10 was added to the draft permit and addresses the management of sewage sludge at Outfall 302.
5. Language addressing multiple discharge points at Outfalls 102 and 302 has been revised to read as follows: "For total suspended solids, oil and grease, and total selenium: since more than one source is associated with this particular waste category, grab samples from each source shall be either physically or arithmetically composited into a single flow weighted sample for analysis and/or reporting. For pH, samples from each source shall be analyzed separately and the highest and lowest results reported."

X. DRAFT PERMIT RATIONALE

The following section sets forth the statutory and regulatory requirements considered in preparing the draft permit. Also set forth are any calculations or other necessary explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guidelines and water quality standards.

A. REASON FOR PERMIT ISSUANCE

The applicant has applied to the Texas Commission on Environmental Quality (TCEQ) for a major amendment to Permit No. 02496 to authorize removal of monitoring requirements for total dissolved solids at Outfall 002; removal of effluent limitations and monitoring requirements for oil and grease at Outfalls 003, 004, and 005; a reduction in monitoring frequencies for total suspended solids at Outfalls 102, 302, 003, 004, 005, and 006; a reduction in monitoring frequency for oil and grease at Outfalls 102 and 006; and removal of biomonitoring requirements at Outfalls 102 and 006. The current permit authorizes the discharge of condenser cooling water and previously monitored effluent (low volume wastewater via internal Outfall 102, plant "X" treated effluent including metal cleaning wastes, chemical metal cleaning wastes, low volume wastes, coal pile runoff, and ash transport water via internal Outfall 202, and domestic wastewater via internal Outfall 302) at a daily average flow not to exceed 600,000,000 gallons per day via Outfall 002; storm water from the lignite storage area runoff pond on an intermittent and flow variable basis via Outfall 003; storm water runoff from the flue gas desulfurization (FGD)/fly ash sludge landfill on an intermittent and flow variable basis via Outfall 004; storm water from the limestone storage area runoff pond on an intermittent and flow variable basis via Outfall 005; and commingled wastewaters from the ash pond on an intermittent and flow variable basis via Outfall 006.

B. WATER QUALITY SUMMARY

The discharge route is via Outfalls 002 and 003, to Brandy Branch Reservoir; thence to Brandy Branch Creek; thence to the Sabine River Above Toledo Bend Reservoir in Segment 0505 of the

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Desuphurization/Fly Ash Landfill Retention Pond on an intermittent and flow variable basis via Outfall 004; wastewater from the Limestone Runoff Pond on an intermittent and flow variable basis via Outfall 005; and wastewater from the Ash Pond on an intermittent and flow variable basis via Outfall 006.

The discharges of once through cooling water via Outfall 002; low volume wastewater via Outfall 102; Plant "X" treated effluent via Outfall 202; domestic wastewater via Outfall 302; wastewater from the Lignite Runoff Pond via Outfall 003; wastewater from the Flue Gas Desuphurization/Fly Ash Landfill Retention Pond via Outfall 004; and wastewater from the Ash Pond via Outfall 006 from this facility is subject to federal effluent limitation guidelines at 40 CFR 122 and/or 40 CFR 423. A new source determination was performed and the above listed discharges are not new sources as defined at 40 CFR § 122.2. Therefore new source performance standards (NSPS) are not required for this discharge.

The discharge of wastewater from the Limestone Runoff Pond via Outfall 005 is not subject to federal effluent limitation guidelines and any technology-based effluent limitations are based on best professional judgement.

Source water for cooling operations for the Pirkey Power Plant is obtained from Brandy Branch Reservoir. Outfalls 002, 102, 202, 302, and 003 discharge to Brandy Branch Reservoir. Outfalls 004, 005, and 006 discharge to unnamed tributaries of Hatley Creek. Once through condenser cooling water and once through miscellaneous cooling water (collectively referred to as "once through cooling water" in the permit) receive no treatment prior to discharge at Outfall 002. Low volume wastes (demineralizer regenerant and floor/yard drains) are routed to the Ecology Pit for settling, precipitation, and flocculation prior to discharge via Outfall 102. Additionally, demineralizer regenerant is routed to a chemical sump and neutralization tank prior to being routed to the Ecology Pit. The permittee may route metal cleaning wastes/chemical metal cleaning wastes, wastewater from the Ash Pond, and wastewater from the Lignite Runoff Pond to Plant "X". Plant "X" provides pH neutralization, filtration, settling, oil/water separation, and chemical wastewater treatment prior to discharge via Outfall 202. Additionally, metal cleaning wastes and chemical metal cleaning wastes are routed to the Metal Cleaning Waste Pond prior to being routed to Plant "X." Domestic sewage is subject to pH neutralization, filtration, settling/clarifier solids separation, chlorination, and chemical wastewater treatment prior to discharge via Outfall 302. Storm water from the lignite storage area is routed to the Lignite Runoff Pond where it is subject to settling and precipitation/flocculation prior to discharge via Outfall 003. Storm water runoff from the flue gas desulfurization/fly ash sludge landfill is routed to the Flue Gas Desulfurization/Fly Ash Landfill Retention Pond where it is subject to settling and precipitation/flocculation prior to discharge via Outfall 004. The permittee may also transfer wastewater from the Lignite Runoff Pond to the Flue Gas Desuphurization/Fly Ash Landfill Retention Pond for treatment and discharge via Outfall 004. Storm water from the limestone storage area is routed to the Limestone Runoff Pond where it is subject to settling and precipitation/flocculation prior to discharge via Outfall 005. Low volume wastes (boiler blowdown and demineralizer regenerant) and ash transport water are routed to the Ash Pond where they are subject to separation, pH adjustment, settling, and precipitation/flocculation prior to discharge via Outfall 006.

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2. CALCULATIONS

See Appendix A of this fact sheet for calculations and further discussion of technology-based effluent limitations proposed in the draft permit.

D. WATER QUALITY-BASED EFFLUENT LIMITATIONS/CONDITIONS1. GENERAL COMMENTS

The Texas Surface Water Quality Standards found at 30 TAC Chapter 307 state that "surface waters will not be toxic to man from ingestion of water, consumption of aquatic organisms, or contact with the skin, or to terrestrial or aquatic life." The methodology outlined in the "Implementation of the Texas Commission on Environmental Quality Standards via Permitting" is designed to insure compliance with 30 TAC Chapter 307. Specifically, the methodology is designed to insure that no source will be allowed to discharge any wastewater which: (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical state water quality standard; (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation which threatens human health.

TPDES permits contain technology-based effluent limits reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations and/or conditions are included. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other toxicity data bases to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

2. AQUATIC LIFE CRITERIAa. SCREENING

Analytical data reported in the application for Outfalls 002, 003, 004, 005, and 006 was screened against calculated water quality-based effluent limitations for the protection of aquatic life. Water quality-based effluent limitations were calculated from freshwater aquatic life criteria found in Table 1 of the Texas Surface Water Quality Standards (30 TAC Chapter 307). The discharges from internal Outfalls 102, 202, and 302 are not subject to screening against water quality-based effluent limitations.

i. Outfall 002

Acute freshwater criteria are applied at the edge of the zone of initial dilution (ZID) and chronic freshwater criteria are applied at the aquatic life mixing zone. The ZID for discharges into lakes and reservoirs is defined as radius of 25 feet from the point where the discharge enters Brandy Branch Reservoir. The aquatic life mixing zone (MZ) for discharges into lakes and reservoirs is defined as a radius of 100 feet from the point where the discharge enters Brandy Branch Reservoir.

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Self report data indicates the two-year highest daily average flow from Outfall 002 is 544.32 million gallons per day (MGD). TCEQ uses the EPA horizontal jet plume model to estimate dilutions at the edge of the ZID and aquatic life mixing zone (MZ) for discharges greater than 10 MGD into lakes and reservoirs. General assumptions used in the horizontal jet plume model are: a non-buoyant discharge, a submersed pipe, and no cross flow. Based on this analysis the following effluent dilutions are calculated:

Outfall 002 ZID:	100%
Outfall 002 aquatic life (MZ):	100%

ii. Outfall 003

Because Outfall 003 discharges on an intermittent and flow variable basis, the discharge is screened using acute freshwater criteria only. Acute freshwater criteria are applied at the edge of the zone of initial dilution (ZID). The ZID for discharges into lakes and reservoirs is defined as radius of 25 feet from the point where the discharge enters Brandy Branch Reservoir.

Self report data indicates there has been no discharge at Outfall 003 from January 2001 through January 2003. For the purposes of this screening, the TCEQ has assumed an effluent flow of <10 MGD. TCEQ practice is to establish minimum estimated effluent dilutions at the ZID for discharges which are less than 10 MGD into lakes and reservoirs. These minimum effluent dilutions are:

Outfall 003 ZID:	60%
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iii. Outfall 004

Because Outfall 004 discharges on an intermittent and flow variable basis, the discharge is screened using acute freshwater criteria only. There is no ZID for discharges directly to an intermittent stream, acute freshwater criteria apply at the end of pipe.

Outfall 004 ZID:	100%
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iv. Outfall 005

Because Outfall 005 discharges on an intermittent and flow variable basis, the discharge is screened using acute freshwater criteria only. There is no ZID for discharges directly to an intermittent stream, acute freshwater criteria apply at the end of pipe.

Outfall 005 ZID:	100%
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FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

v. Outfall 006

There is no ZID for discharges directly to an intermittent stream, acute freshwater criteria apply at the end of pipe. Chronic freshwater criteria are applied at the edge of the aquatic life mixing zone. The aquatic life mixing zone (MZ) for discharges into perennial rivers, creeks, etc. is defined as 100 feet upstream and 300 feet downstream from the point where the discharge enters Hatley Creek.

Self report data indicates the two-year highest daily average flow from Outfall 006 is 1.96 MGD. TCEQ uses the mass balance equation to estimate dilutions at the edge of the aquatic life mixing zone (MZ) during critical conditions. The estimated dilution at the aquatic life mixing zone is calculated using the 7Q2 (7-day, 2-year) flow of 0.26 cfs for the perennial waterbody. The dilution at the ZID is defined as 100% since the 7Q2 of the intermittent stream is 0.0 cfs. The following effluent dilutions are calculated:

Outfall 006 ZID:	100%
Outfall 006 aquatic life (MZ):	92.1%

Wasteload allocations (WLAs) are calculated using the above estimated effluent dilutions, criteria outlined in the Texas Surface Water Quality Standards, and partitioning coefficients for metals (when appropriate and designated in the implementation procedures). The WLA is the end-of-pipe effluent concentration which can be discharged, when after mixing in the receiving stream, instream numerical criteria will not be exceeded. From the WLA, a long term average (LTA) is calculated using a log normal probability distribution, a given coefficient of variation (0.6), and a 99th (Outfall 002, discharge to Brandy Branch Reservoir) or 90th (Outfall 006, discharge to Hatley Creek) percentile confidence level. The LTA is the long term average effluent concentration calculated to meet the WLA using a selected percentile confidence level. The lower of the two LTAs (acute and chronic) is used to calculate a daily average and daily maximum effluent limitation for the protection of aquatic life using the same statistical considerations with the 99th percentile confidence level and a standard number of monthly effluent samples collected (12).

TCEQ practice for determining significant potential is to compare the reported analytical data against percentages of the calculated daily average water quality-based effluent limitation. Permit limitations are required when analytical data reported in the application exceeds 85% of the calculated daily average water quality-based effluent limitation. Monitoring and reporting is required when analytical data reported in the application exceeds 70% of the calculated daily average water quality-based effluent limitation.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

b. PERMIT ACTION

Reported analytical data for the following parameters exceeded 85% of the calculated daily average water quality-based effluent limitation for aquatic life protection:

Outfall 002: None
 Outfall 003: Selenium, total
 Outfall 004: None
 Outfall 005: None
 Outfall 006: None

Reported analytical data for the following parameters exceeded 70% of the calculated daily average water quality-based effluent limitation for aquatic life protection, but was less than 85% of the calculated daily average water quality-based effluent limitation for aquatic life protection:

Outfall 002: None
 Outfall 003: None
 Outfall 004: None
 Outfall 005: None
 Outfall 006: None

The current permit includes effluent limitations for total selenium at Outfalls 003, 004, and 006. Effluent limitations calculated in Appendix B of this fact sheet for total selenium at Outfalls 003 and 004 are equivalent to those in the existing permit and are continued in the draft permit. Effluent limitations calculated in Appendix B of this fact sheet for Outfall 006 are more stringent than those included in the existing permit. The draft permit has been revised to include effluent limitations for total selenium at Outfall 006, as calculated in Appendix B of this fact sheet.

The following permit limitations and/or monitoring/reporting requirements are proposed in the draft permit for aquatic life protection:

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Avg.</u>	<u>Daily Max.</u>
003	Selenium, total	N/A	0.033 mg/L
004	Selenium, total	N/A	0.036 mg/L
006	Selenium, total	0.006 mg/L	0.013 mg/L

An interim three year compliance period is being established for total selenium at Outfall 006 in accordance with 30 TAC § 307.2(f) and 40 CFR § 122.47. A compliance schedule is included in the draft permit in accordance with 40 CFR § 122.47(a)(3).

See Appendix B of this fact sheet for calculation of water quality-based effluent limitations for aquatic life protection. For more details on the calculation of water quality-based effluent limitations, see the TCEQ guidance document - "Implementation of the Texas Commission on Environmental Quality Standards

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Via Permitting" and EPA's "Technical Support Document For Water Quality-based Toxics Control".

3. AQUATIC ORGANISM TOXICITY CRITERIA (7-DAY CHRONIC)a. SCREENING

The existing permit includes chronic freshwater biomonitoring requirements at Outfall 002. A review of the whole effluent toxicity testing database indicates that in the past five years, the permittee has performed twenty-four chronic tests, with one demonstration of significant toxicity (*Pimephales promelas*, 1/29/02, growth, NOEC, <32%). However, persistent, significant lethality was never demonstrated. Additionally, analytical data submitted with the application does not indicate violation of any numerical water quality-based effluent limitation for aquatic life protection. Therefore, minimum chronic freshwater biomonitoring conditions required for EPA classified major facilities are proposed in the draft permit as outlined below. This application was submitted prior to 11/22/02; therefore, once per six months biomonitoring frequency is proposed.

b. PERMIT ACTION

The provisions of this section apply to Outfall 002.

Based on information contained in the permit application, TCEQ has determined that there may be pollutants present in the effluent(s) which may have the potential to cause toxic conditions in the receiving stream.

Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. The biomonitoring procedures stipulated as a condition of this permit are as follows:

- i) Chronic static renewal 7-day survival and reproduction test using the water flea (*Ceriodaphnia dubia*) (Method 1002.0). The frequency of the testing is once per six months.
- ii) Chronic static renewal 7-day larval survival and growth test using the fathead minnow (*Pimephales promelas*) (Method 1001.0). The frequency of the testing is once per six months.

Toxicity tests shall be performed in accordance with protocols described in the latest revision of the "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Third Edition," EPA-600-4-91-002. The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the state water quality standards. The biomonitoring frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

This permit may be reopened to require effluent limits, additional testing, and/or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body.

c. DILUTION SERIES

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 32%, 42%, 56%, 75%, and 100%. The low-flow effluent concentration (critical dilution) is defined as 100% effluent.

The dilution series outlined above was calculated using a 0.75 factor applied to the critical dilution. The critical dilution is the estimated effluent dilution at the edge of the aquatic life mixing zone which is calculated in section X.D.2.a. of this fact sheet.

4. AQUATIC ORGANISM TOXICITY CRITERIA (24 - HOUR ACUTE)a. SCREENING

The existing permit includes 24-hour acute freshwater biomonitoring language for Outfalls 002, 102, and 006. A review of the whole effluent toxicity testing database indicates that in the past five years the permittee has performed twenty-four 24-hour acute tests for Outfall 002, none of which demonstrated significant mortality. Minimum 24-hour acute freshwater biomonitoring requirements for Outfall 002 are proposed in the draft permit as outlined below.

24-hour acute biomonitoring is not recommended at Outfalls 102 and 006 in the draft permit. Significant mortality has not been demonstrated at these Outfalls and due to the nature of the discharge and types of wastes generated, the TCEQ has not continued the biomonitoring requirements at these outfalls.

b. PERMIT ACTION

24-hour 100% acute biomonitoring tests are required at Outfall 002 at a frequency of once per six months for the life of the permit.

The biomonitoring procedures stipulated as a condition of this permit are as follows:

- i) Acute 24-hour static toxicity test using the water flea (Daphnia pulex). A minimum of five (5) replicates with eight (8) organisms per replicate shall be used for this test.
- ii) Acute 24-hour static toxicity test using the fathead minnow (Pimephales promelas). A minimum of five (5) replicates with eight (8) organisms per replicate shall be used for this test.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

5. AQUATIC ORGANISM BIOACCUMULATION CRITERIAa. SCREENING

Analytical data reported in the application for Outfalls 002 and 006 was screened against calculated water quality-based effluent limitations for the protection of human health (using consumption of freshwater fish tissue criteria found in Table 3 of the Texas Surface Water Quality Standards - 30 TAC Chapter 307). The intermittent flow variable discharges at Outfalls 003, 004, and 005 and discharges from internal Outfalls 102, 202, and 302 are not subject to screening against water quality-based effluent limitations.

i. Outfall 002

Freshwater fish tissue bioaccumulation criteria are applied at the human health mixing zone. The human health mixing zone for discharges into reservoirs is defined as a 200 foot radius from the point where the discharge enters Brandy Branch Reservoir.

Self report data indicates the average of the daily average flow from Outfall 002 is 432 MGD. The following estimated effluent dilution is calculated at the human health mixing zone using the EPA horizontal jet plume model for discharges into lakes/reservoirs:

Outfall 002 human health mixing zone: 100%

ii. Outfall 006

Freshwater fish tissue bioaccumulation criteria are applied at the human health mixing zone. The human health mixing zone for discharges into rivers/creeks is identical to the aquatic life mixing zone.

Self report data indicates the average of the daily average from Outfall 006 is 1.234 million gallons per day (MGD). TCEQ uses the mass balance equation to estimate dilutions at the edge of the human health mixing zone during average flow conditions. The estimated dilution at the human health mixing zone is calculated using the harmonic mean flow of 0.52 cfs. The following effluent dilution is calculated:

Outfall 006 human health mixing zone: 78.5%

Water quality-based effluent limitations for the protection of human health with consideration for consumption of freshwater fish tissue are calculated using the same procedure as outlined for calculation of water quality-based effluent limitations for aquatic life protection in section X.D.2.a. of this fact sheet. A 99th percentile confidence level in the long term average calculation is used with only one long term average value being calculated.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Significant potential is again determined by comparing reported analytical data against 70% and 85% of the calculated daily average water quality-based effluent limitation.

b. PERMIT ACTION

Reported analytical data for the following parameters exceeded 85% of the calculated daily average water quality-based effluent limitation for human health protection (using consumption of freshwater fish tissue criteria):

Outfall 002: None

Outfall 006: None

Reported analytical data for the following parameters exceeded 70% of the calculated daily average water quality-based effluent limitation for human health protection (using consumption of freshwater fish tissue criteria), but was less than 85% of the calculated daily average water quality-based effluent limitation for human health protection (using consumption of freshwater fish tissue criteria):

Outfall 002: None

Outfall 006: None

See Appendix B of this fact sheet for calculation of water quality-based effluent limitations for human health protection. For more details on the calculation of water quality-based effluent limitations, see the TCEQ guidance document - "Implementation of the Texas Commission on Environmental Quality Standards Via Permitting" and EPA's "Technical Support Document For Water Quality-based Toxics Control."

6. DRINKING WATER SUPPLY PROTECTIONa. SCREENING

Water quality Segment No. 0505 which receives the discharge(s) from this facility is designated as a public water supply. The discharge point is located at a distance greater than three miles from the classified segment. Screening reported analytical data for Outfalls 002 and 006 against water quality-based effluent limitations calculated for the protection of a drinking water supply is not applicable due to the distance between the discharge point and the classified segment.

b. PERMIT ACTION

None.

XI. PRETREATMENT REQUIREMENTS

This facility is not defined as a publicly owned treatment works (POTW). Pretreatment requirements are not proposed in the draft permit.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

XII. VARIANCE REQUESTS

No variance requests have been received.

XIII. PROCEDURES FOR FINAL DECISION

When an application is declared administratively complete, the Chief Clerk sends a letter to the applicant advising the applicant to publish the Notice of Receipt of Application and Intent to Obtain Permit in the newspaper. In addition, the Chief Clerk instructs the applicant to place a copy of the application in a public place for review and copying in the county where the facility is or will be located. This application will be in a public place throughout the comment period. The Chief Clerk also mails this notice to any interested persons and, if required, to landowners identified in the permit application. This notice informs the public about the application, and provides that an interested person may file comments on the application or request a contested case hearing or a public meeting.

Once a draft permit is completed, it is sent, along with the Executive Director's preliminary decision, as contained in the technical summary or fact sheet, to the Chief Clerk. At that time, Notice of Application and Preliminary Decision will be mailed to the same people and published in the same newspaper as the prior notice. This notice sets a deadline for making public comments. The applicant must place a copy of the Executive Director's preliminary decision and draft permit in the public place with the application. This notice sets a deadline for public comment.

Any interested person may request a public meeting on the application until the deadline for filing public comments. A public meeting is intended for the taking of public comment, and is not a contested case proceeding.

After the public comment deadline, the Executive Director prepares a response to all significant public comments on the application or the draft permit raised during the public comment period. The Chief Clerk then mails the Executive Director's Response to Comments and Final Decision to people who have filed comments, requested a contested case hearing, or requested to be on the mailing list. This notice provides that if a person is not satisfied with the Executive Director's response and decision, they can request a contested case hearing or file a request to reconsider the Executive Director's decision within 30 days after the notice is mailed.

The Executive Director will issue the permit unless a written hearing request or request for reconsideration is filed within 30 days after the Executive Director's Response to Comments and Final Decision is mailed. If a hearing request or request for reconsideration is filed, the Executive Director will not issue the permit and will forward the application and request to the TCEQ Commissioners for their consideration at a scheduled Commission meeting. If a contested case hearing is held, it will be a legal proceeding similar to a civil trial in state district court.

If the Executive Director calls a public meeting or the Commission grants a contested case hearing as described above, the Commission will give notice of the date, time, and place of the meeting or hearing. If a hearing request or request for reconsideration is made, the Commission will consider all public comments in making its decision and shall either adopt the Executive Director's response to public comments or prepare its own response.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

XIV. ADMINISTRATIVE RECORD

The following section is a list of the fact sheet citations to applicable statutory or regulatory provisions and appropriate supporting references.

A. PERMIT

TPDES Permit No. 02496 issued on December 31, 1999.

B. APPLICATION

TCEQ wastewater permit application received September 23, 2002.

C. 40 CFR CITATIONS

40 CFR Part 122

40 CFR Part 423

D. LETTERS/MEMORANDA/RECORDS OF COMMUNICATION

TCEQ Interoffice Memorandum from Kenda Smith, Water Quality Assessment Team to Industrial Permits, dated March 13, 2003.

TCEQ Interoffice Memorandum from Michael B. Pfeil, Water Quality Assessment Team to Industrial Permits Team, dated March 3, 2003.

TCEQ Interoffice Memorandum from Michael B. Pfeil, Water Quality Assessment Team to Industrial Permits Team, dated January 23, 2003.

TCEQ Interoffice Memorandum from Mark A. Rudolph, Water Quality Assessment Team to Industrial Permits Team dated January 23, 2003.

TCEQ Interoffice Memorandum from Kenda Smith, Water Quality Assessment Team to Industrial Permits, dated January 21, 2003.

TCEQ Interoffice Memorandum from Robert Burgess, Water Quality Standards Team to Industrial Team dated January 15, 2003.

Letter from Caroline Huertas, TCEW to Franklin L. Mills, American Electric Power, dated January 13, 2002.

Letter from Franklin L. Mills, American Electric Power to Laurie J. Lancaster, TCEQ dated December 17, 2002.

Fax Transmittal from Laurie J. Lancaster, TCEQ to Franklin L. Mills, American Electric Power, dated December 13, 2002.

Letter from Franklin L. Mills, American Electric Power to Laurie J. Lancaster, TCEQ dated December 11, 2002.

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Letter from Laurie J. Lancaster, TCEQ to Franklin L. Mills, American Electric Power dated September 27, 2002.

E. MISCELLANEOUS

Quality Criteria for Water (1986), EPA 440/5-86-001, 5/1/86.

The State of Texas Water Quality Inventory, 13th Edition, Publication No. SFR-50, Texas Commission on Environmental Quality, December 1996.

Texas Surface Water Quality Standards, 30 TAC Sections 307.1 - 307.10 (21 TexReg 9765, 4/30/97).

"Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fourth Edition," EPA/600/4-90/027F.

"Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Third Edition," EPA-600-4-91-002.

"Implementation of the Texas Commission on Environmental Quality Standards via Permitting," Texas Commission on Environmental Quality, August 1995.

"TCEQ Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits," TCEQ Document No. 98-001.000-OWR-WQ, May 1998.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

APPENDIX A
CALCULATED TECHNOLOGY BASED EFFLUENT LIMITATIONS

Outfall 002

The discharge at Outfall 002 consists of once through cooling water (once through condenser water and once through miscellaneous cooling water) and previously monitored effluent. Previously monitored effluent consists of low volume wastewater permitted at internal Outfall 102; the discharge of Plant "X" treated effluent at internal Outfall 202; and domestic wastewater permitted at internal Outfall 302. Technology-based effluent limitations are applied to the discharges of low volume wastewater, Plant "X" treated effluent, and treated domestic wastewater at internal Outfalls 102, 202, and 302, respectively.

The discharge of once-through cooling water is subject to categorical guidelines in 40 CFR Part 423 (Steam Electric Power Generating Point Source Category). Because the discharge of once-through cooling water comprises over 99% of the discharge at Outfall 002, effluent limitations applicable to once-through cooling water are applied to the outfall as a whole.

Technology-based effluent limitations are listed as follows:

BAT (40 CFR §423.13)

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Residual Chlorine	N/A	0.2 mg/L

- * Total residual chlorine may not be discharged from any single generating unit for more than two hours per day.

Mass based effluent limitations were calculated in the following way:

Total Residual Chlorine

$$\text{Daily Maximum} = (0.2 \text{ mg/L}) * (8.345) * (544.32 \text{ MGD}) / 12$$

The concentration limitation is multiplied by a conversion factor, then by the two year high daily average flow. The result is divided by twelve due to limitations on the period of time and number of operating units.

Monitoring Requirements are established for temperature based on best professional judgement.

The technology-based effluent limitations outlined above are equal to those included in the current permit, and are continued in the draft permit as follows:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Residual Chlorine	N/A	0.2 mg/L
	N/A	75.6 lbs/day
Temperature (°F)	(Report)	(122)

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Outfall 102

The discharge at Outfall 102 consists of low volume wastes (demineralizer regenerant and floor/yard drains) is subject to categorical guidelines in 40 CFR Part 423 (Steam Electric Power Generating Point Source Category).

Technology-based effluent limitations are listed as follows:

BPT (40 CFR §423.12)

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	30 mg/L	100 mg/L
Oil and Grease	15 mg/L	20 mg/L
pH	Between 6.0 and 9.0 standard units	

Effluent limitations and monitoring requirements are established for total selenium based upon best professional judgement and the use of lignite as a fuel.

The technology-based effluent limitations outlined above are equal to those included in the current permit, and are continued in the draft permit as follows:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	30 mg/L	100 mg/L
Oil and Grease	15 mg/L	20 mg/L
Selenium, total	0.012 mg/L	0.025 mg/L
pH	Between 6.0 and 9.0 standard units.	

Outfall 202

The discharge at Outfall 202 consists of Plant "X" treated effluent (treated metal cleaning wastes, treated chemical metal cleaning wastes, wastewater from the Lignite Runoff Pond, wastewater from the Flue Gas Desulfurization/Fly Ash Sludge Landfill Pond, and wastewaters from the Ash Pond. The discharges of metal cleaning wastes, chemical metal cleaning wastes, coal pile runoff (Lignite Runoff Pond), and ash transport water (Ash Pond) are subject to categorical guidelines in 40 CFR Part 423 (Steam Electric Power Generating Point Source Category).

Technology-based effluent limitations are listed for metal cleaning wastes and chemical metal cleaning wastes are as follows:

BPT (40 CFR §423.12)

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	30 mg/L	100 mg/L
Oil and Grease	15 mg/L	20 mg/L
Copper, Total	1.0 mg/L	1.0 mg/L
Iron, Total	1.0 mg/L	1.0 mg/L
pH	Between 6.0 and 9.0 standard units	

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

BAT (40 CFR §423.13)

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Copper, Total	1.0 mg/L	1.0 mg/L
Iron, Total	1.0 mg/L	1.0 mg/L

Technology-based effluent limitations are listed for coal pile runoff are as follows:

BPT (40 CFR §423.12)

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	N/A	50 mg/L
pH	Between 6.0 and 9.0 standard units	

Technology-based effluent limitations are listed for ash transport water are as follows:

BPT (40 CFR §423.12)

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	30 mg/L	100 mg/L
Oil and Grease	15 mg/L	20 mg/L
pH	Between 6.0 and 9.0 standard units	

Technology-based effluent limitations are applied to the total discharge at Outfall 202 as follows:

30 Texas Administrative Code (TAC) 319.22

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Copper, Total	0.5 mg/L	1.0 mg/L

Contributions of metal cleaning waste, chemical metal cleaning waste, coal pile runoff, and ash transport water to Plant "X" are intermittent and flow variable. For this reason, the more stringent of the applicable technology based effluent limitations from each categorical waste stream is applied at Outfall 202 (except daily maximum effluent limitations for total suspended solids). Daily maximum effluent limitations for total suspended solids are established at 100 mg/L. Effluent limitations for total copper and total iron are applicable only when discharging metal cleaning wastes or chemical metal cleaning wastes. Effluent limitations for total selenium are established based upon best professional judgement, and are included as a result of the discharges of coal pile runoff and ash transport water.

The technology-based effluent limitations outlined above are equal to those included in the current permit, and are continued in the draft permit as follows:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	30 mg/L	100 mg/L
Oil and Grease	15 mg/L	20 mg/L
Selenium, Total	0.016 mg/L	0.033 mg/L
Iron, Total	1.0 mg/L	1.0 mg/L
Copper, Total	0.5 mg/L	1.0 mg/L

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Outfall 302

The discharge at Outfall 302 consists of treated domestic wastewater. The discharge of treated domestic wastewater is not subject to categorical guidelines in 40 CFR Part 423 (Steam Electric Power Generating Point Source Category), but is subject to effluent limitations in 30 Texas Administrative Code Chapter 309.

Technology-based effluent limitations are listed as follows:

30 TAC 309

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	20 mg/L	65 mg/L
Biochemical Oxygen Demand (5-day)	20 mg/L	65 mg/L
Total Residual Chlorine	1.0 mg/L (min)	N/A
pH	Between 6.0 and 9.0 standard units	

The technology-based effluent limitations outlined above are equal to those included in the current permit, and are continued in the draft permit as follows:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	20 mg/L	65 mg/L
	2.5 lbs/day	N/A
Biochemical Oxygen Demand (5-day)	20 mg/L	65 mg/L
	2.5 lbs/day	N/A
Total Residual Chlorine	1.0 mg/L (min)	Report mg/L (max)
pH	Between 6.0 and 9.0 standard units	

Mass based effluent limitations, above are calculated by multiplying the concentration based effluent limitation by the permitted flow and conversion factor of 8,345.

Outfall 003

The discharge at Outfall 003 consists wastewater from the Lignite Runoff Pond (coal pile runoff) is subject to categorical guidelines in 40 CFR Part 423 (Steam Electric Power Generating Point Source Category).

Technology-based effluent limitations are listed as follows:

BPT (40 CFR §423.12)

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	N/A	50 mg/L
pH	Between 6.0 and 9.0 standard units	

Additionally, daily maximum effluent limitations for oil and grease are established in the existing permit at 20 mg/L daily maximum and based on best professional judgement.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

The technology-based effluent limitations outlined above are equal to those included in the current permit, and are continued in the draft permit as follows:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	N/A	50 mg/L
Oil and Grease	N/A	20 mg/L
pH	Between 6.0 and 9.0 standard units.	

Outfall 004

The discharge at Outfall 004 consists of wastewater from the Flue Gas Desulphurization/Fly Ash Pond (storm water from the Flue Gas Desuphourzation/Fly Ash Landfill and wastewater from the Lignite Runoff Pond). The discharge of wastewater from the Flue Gas Desulphurization/Fly Ash Pond is not subject to categorical guidelines in 40 CFR Part 423 (Steam Electric Power Generating Point Source Category), and the following effluent limitations are continued from the existing permit and based on best professional judgment:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	N/A	100 mg/L
Oil and Grease	N/A	20 mg/L
pH	Between 6.0 and 9.0 standard units.	

Outfall 005

The discharge at Outfall 005 consists wastewater from the Limestone Runoff Pond. The discharge of storm water from the Limestone Runoff Pond is not subject to categorical guidelines in 40 CFR Part 423 (Steam Electric Power Generating Point Source Category), and the following effluent limitations are continued from the existing permit and based on best professional judgment:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	N/A	50 mg/L
Oil and Grease	N/A	20 mg/L
pH	Between 6.0 and 9.0 standard units.	

Outfall 006

The discharge at Outfall 006 consists wastewater from the Ash Pond (low volume wastes including boiler blowdown and demineralizer regenerant and ash transport water. The discharges of low volume wastes and ash transport water are subject to categorical guidelines in 40 CFR Part 423 (Steam Electric Power Generating Point Source Category).

Technology-based effluent limitations are listed for low volume wastes and fly ash transport water are as follows:

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

BPT (40 CFR §423.12)

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	30 mg/L	100 mg/L
Oil and Grease	15 mg/L	20 mg/L
pH	Between 6.0 and 9.0 standard units	

The technology-based effluent limitations outlined above are equal to those included in the current permit, and are continued in the draft permit as follows:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	30 mg/L	100 mg/L
Oil and Grease	15 mg/L	20 mg/L
pH	Between 6.0 and 9.0 standard units.	

OTHER REQUIREMENTS

Definitions for 10 year, 24 hour rainfall event, total residual chlorine, ash transport water, low volume wastes, metal cleaning wastes, chemical metal cleaning wastes, once through cooling water, and coal pile runoff are included in the draft permit as defined by 40 CFR 423.11.

An "Other Requirement" prohibiting the discharge of polychlorinated biphenyl compounds is included in the permit as required by 40 CFR 423.12(b)(2) and 423.13(a).

An "Other Requirement" prohibiting the discharged from any single generating unit for more than two hours per day (unless the discharger demonstrates to the TCEQ that discharge for more than two hours is required for macroinvertebrate control) is included in the permit as required by 40 CFR 423.12(b)(8) and 423.13(d)(2).

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

APPENDIX B
CALCULATED WATER QUALITY BASED EFFLUENT LIMITATIONS

TEXTTOX MENU # 4 30 TAC 307 (7/13/95)

THE RECEIVING STREAM IS A LAKE OR RESERVOIR.

INPUT

Prepared By:	Kimberly Wilson
Permittee:	Southwestern Electric
Permit No.:	2496
Outfall No.:	2
Receiving Stream:	Brandy Branch Res.
Segment No.:	505
Segment Name:	Sabine River Above
TSS:	16.0
pH:	6.7
Hardness:	41.0
Chloride:	42.0
Critical Low Flow [7Q2] (cfs)	N/A
Harmonic Mean Flow (cfs)	N/A
Effluent Flow for Aquatic Life (MGD)	544.320
Percent Effluent for Human Health:	100.0
Percent Effluent for ZID:	100.0
Percent Effluent for Mixing Zone:	100.0
Fish Only (1) or Water & Fish (2) Option:	1

CALCULATE TOTAL/DISSOLVED RATIO

<i>LAKE</i>	<i>K_{po}</i>	<i>a</i>	<i>Ct/Cd</i>	<i>Fraction Dissolved</i>	
<i>METAL</i>					
Aluminum	N/A	N/A	1.00	1.00	Assumed
Arsenic	0.48	-0.73	2.01	0.50	
Cadmium	3.52	-0.92	5.39	0.19	
Chromium (Total)	2.17	-0.27	17.42	0.06	
Chromium (3+)	2.17	-0.27	17.42	0.06	
Chromium (6+)	N/A	N/A	1.00	1.00	Assumed
Copper	2.85	-0.9	4.76	0.21	
Lead	2.04	-0.53	8.51	0.12	
Mercury	N/A	N/A	1.00	1.00	
Nickel	2.21	-0.76	5.30	0.19	
Selenium	N/A	N/A	1.00	1.00	Assumed
Silver	2.4	-1.03	3.21	0.083	f(Cl)
Zinc	3.34	-0.68	9.11	0.11	

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM PERMIT LIMITS

CONSTITUENT	ACUTE CHRONIC		WLAa	WLAc	LTAa	LTAc	DLY AVG (ug/l)	DLY MAX (ug/l)	MAL (ug/l)
	STANDARD (ug/L)	STANDARD (ug/L)							
Aldrin	3	1E+183	3.00	*****	0.960	*****	1.411	2.986	0.05
Aluminum	991	1E+183	991	*****	317.1	*****	466.2	986.2	30
Arsenic	360	190	725	383	232	234	341	722	10
Cadmium	12.32	0.56	66.5	3.04	21.27	1.9	2.72	5.76	1
Carbaryl	2	1E+183	2.000	*****	0.640	*****	0.941	1.990	5
Chlordane	2.4	0.0043	2.400	0.004	0.768	0.00	0.004	0.008	0.15
Chlorpyrifos	0.083	0.041	0.083	0.041	0.027	0.03	0.037	0.078	0.05
Chromium (3+)	837	100	14578	1738	4665	1060	1558	3296	***
Chromium (6+)	16	11	16.00	11.00	5.12	6.7	7.53	15.92	10
Copper	8.29	5.97	39.44	28.43	12.62	17.35	18.55	39.26	10
Cyanide	45.78	10.69	45.78	10.69	14.65	6.52	9.59	20.28	20
4,4'-DDT	1.1	0.001	1.100	0.001	0.352	0.001	0.001	0.002	0.1
Demeton	1E+183	0.1	*****	0.100	*****	0.061	0.090	0.190	0.2
Dicofol	59.3	19.8	59.3	19.8	19.0	12.1	17.8	37.6	20
Dieldrin	2.5	0.0019	2.500	0.002	0.800	0.001	0.002	0.004	0.1
Diuron	210	70	210	70	67	43	63	133	***
Endosulfan	0.22	0.056	0.220	0.056	0.070	0.034	0.050	0.106	0.1
Endrin	0.18	0.0023	0.180	0.002	0.058	0.001	0.002	0.004	0.1
Guthion	1E+183	0.01	*****	0.010	*****	0.006	0.009	0.019	0.1
Heptachlor	0.52	0.0038	0.520	0.004	0.166	0.002	0.003	0.007	0.05
Hexachlorocyclohexane	2	0.08	2.000	0.080	0.640	0.049	0.072	0.152	0.05
Lead	26.24	1.02	223.29	8.70	71.45	5.31	7.80	16.51	5
Malathion	1E+183	0.01	*****	0.010	*****	0.006	0.009	0.019	0.1
Mercury	2.4	1.3	2.400	1.300	0.768	0.793	1.129	2.388	0.2
Methoxychlor	1E+183	0.03	*****	0.030	*****	0.018	0.027	0.057	2
Mirex	1E+183	0.001	*****	0.001	*****	0.001	0.001	0.002	0.2
Nickel	667	74	3535	393	1131	240	352	745	10
PCBs (Total)	2	0.014	2.000	0.014	0.640	0.009	0.013	0.027	1
Parathion	0.065	0.013	0.065	0.013	0.021	0.008	0.012	0.025	0.1
Phenanthrene	30	30	30.0	30.0	9.6	18.3	14.1	29.9	10
Pentachlorophenol	6.71	4.24	6.71	4.24	2.15	2.58	3.16	6.68	50
Selenium	20	5	20.0	5.000	6.40	3.05	4.48	9.49	10
Silver	0.92	*****	11.05	*****	3.535	*****	5.197	10.994	2
Toxaphene	0.78	0.0002	0.780	0.0002	0.250	0.0001	0.0002	0.0004	5
Tributyltin	0.13	0.024	0.130	0.024	0.042	0.015	0.022	0.046	0.01
2,4,5-Trichlorophenol	136	64	136	64	44	39	57	121	50
Zinc	55	50	501	454	160	277	236	498	5

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

HUMAN HEALTH

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM PERMIT LIMITS

CONSTITUENT	Water		WLAh	LTAh	DLY AVG (ug/l)	DLY MAX (ug/l)	MAL (ug/l)
	Fish Only (ug/l)	and Fish (ug/l)					
Aldrin	0.0327	0.0312	0.033	0.030	0.045	0.095	0.05
Alpha Hexachlorocyclohexane	0.997	0.645	0.997	0.927	1.363	2.884	0.05
Arsenic	*****	50	0	0	0	0	10
Barium	*****	2000	0	0	0	0	10
Benzene	312	5	312.00	290.16	426.54	902.40	10
Benzidine	0.0035	0.0011	0.004	0.003	0.005	0.010	50
Benzo(a)anthracene	0.0265	0.0261	0.027	0.025	0.036	0.077	10
Benzo(a)pyrene	0.0265	0.0261	0.027	0.025	0.036	0.077	10
Beta Hexachlorocyclohexane	3.49	2.26	3.490	3.246	4.771	10.094	0.05
Bis(chloromethyl)ether	1.59	0.0207	1.590	1.479	2.174	4.599	***
Cadmium	*****	5	0.00	0.00	0.00	0.00	1
Carbon Tetrachloride	182	5	182.00	169.26	248.81	526.40	10
Chlordane	0.0213	0.021	0.021	0.020	0.029	0.062	0.15
Chlorobenzene	4947	1305	4947	4601	6763	14308	10
Chloroform	12130	*****	12130	11281	16583	35084	10
Chromium	*****	100	0	0	0	0	10
Chrysene	0.0265	0.0261	0.027	0.025	0.036	0.077	10
Cresols	46667	4049	46667	43400	63798	134975	10
Cyanide (Free)	*****	200	0	0	0	0	20
4,4'-DDD	0.299	0.297	0.299	0.278	0.409	0.865	0.1
4,4'-DDE	0.0545	0.0544	0.055	0.051	0.075	0.158	0.1
4,4'-DDT	0.0528	0.0527	0.053	0.049	0.072	0.153	0.1
2,4-D	*****	70	0	0	0	0	10
Danitrol	0.721	0.709	0.721	0.671	0.986	2.085	***
Dibromochloromethane	15354	100	15354	14279	20990	44408	10
1,2-Dibromoethane	1.15	0.0518	1.150	1.070	1.572	3.326	2
Dieldrin	0.0012	0.0012	0.001	0.001	0.002	0.003	0.1
p-Dichlorobenzene	*****	75	0	0	0	0	10
1,2-Dichloroethane	1794	5	1794.00	1668.42	2452.58	5188.79	10
1,1-Dichloroethylene	87.4	7	87.40	81.28	119.48	252.79	10
Dicofol	0.217	0.215	0.217	0.202	0.297	0.628	20
Dioxins/Furans	1.00E-06	1.00E-06	1.00E-06	9.30E-07	1.00E-06	2.89E-06	10
Endrin	*****	2	0.0	0.0	0.0	0.0	0.1
Flouride	*****	4000	0	0	0	0	500
Gamma Hexachlorocyclohexane	16	0.2	16.000	14.880	21.874	46.277	0.05
Heptachlor	0.0181	0.0177	0.018	0.017	0.025	0.052	0.05
Heptachlor Epoxide	7.39	0.2	7.390	6.873	10.103	21.374	1
Hexachlorobenzene	0.0129	0.0129	0.013	0.012	0.018	0.037	10
Hexachlorobutadiene	11.2	9.34	11.20	10.42	15.31	32.39	10
Hexachloroethane	94.1	84.4	94.1	87.5	128.6	272.2	20
Hexachlorophene	0.0532	0.0531	0.053	0.049	0.073	0.154	10
Lead	25	5	212.7	197.8	290.8	615.2	5
Mercury	0.0122	0.0122	0.012	0.011	0.017	0.035	0.2
Methoxychlor	*****	40	0	0	0	0	2
Methyl Ethyl Ketone	886667	4411	886667	824600	1212162	2564507	50
Mirex	0.0189	0.0171	0.019	0.018	0.026	0.055	0.2
Nitrate-Nitrogen	*****	10000	0	0	0	0	1000
Nitrobenzene	721	41.8	721.0	670.5	985.7	2085.3	10
N-Nitrosodiethylamine	7.68	0.0382	7.680	7.142	10.499	22.213	20
N-Nitroso-di-n-Butylamine	13.5	1.84	13.500	12.555	18.456	39.046	20
PCB's	0.0013	0.0013	0.001	0.001	0.002	0.004	1
Pentachlorobenzene	1.11	1.09	1.110	1.032	1.517	3.210	20
Pentachlorophenol	136	129	136.0	126.5	185.9	393.4	50
Pyridine	13333	88.1	13333.0	12399.7	18227.5	38563.0	20
Selenium	*****	50	0.0	0.0	0.0	0.0	10
1,2,4,5-Tetrachlorobenzene	1.52	1.43	1.520	1.414	2.078	4.396	20
Tetrachloroethylene	1832	5	1832.00	1703.76	2504.53	5298.69	10
Toxaphene	0.0445	0.044	0.045	0.041	0.061	0.129	5
2,4,5-TP (Silvex)	*****	50	0.0	0.0	0.0	0.0	2
2,4,5-Trichlorophenol	4021	2767	4021	3740	5497	11630	50
Trichloroethylene	*****	5	0.00	0.00	0.00	0.00	10
1,1,1-Trichloroethane	*****	200	0	0	0	0	10
TTHMs	*****	100	0	0	0	0	10
Vinyl Chloride	94.5	2	94.50	87.89	129.19	273.32	10

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

CALCULATE 70% AND 85% OF DAILY AVERAGE PERMIT LIMITS

<i>AQUATIC LIFE</i>	70%	85%
Aldrin	0.99	1.20
Aluminum	326	396
Arsenic	239	290
Cadmium	1.91	2.32
Carbaryl	0.66	0.80
Chlordane	0.003	0.003
Chlorpyrifos	0.026	0.031
Chromium (3+)	1091	1324
Chromium (6+)	5.27	6.40
Copper	12.99	15.77
Cyanide	6.71	8.15
4,4'-DDT	0.001	0.001
Demeton	0.063	0.076
Dieldrin	0.001	0.001
Diuron	43.94	53.35
Endosulfan	0.035	0.043
Endrin	0.001	0.002
Guthion	0.006	0.008
Heptachlor	0.002	0.003
Hexachlorocyclohexane	0.05	0.06
Lead	5	7
Malathion	0.006	0.008
Mercury	0.79	0.96
Methoxychlor	0.02	0.02
Mirex	0.001	0.001
Nickel	247	300
PCBs (Total)	0.009	0.011
Parathion	0.008	0.010
Phenanthrene	9.88	12.00
Pentachlorophenol	2.21	2.68
Selenium	3.14	3.81
Silver	3.64	4.42
Toxaphene	0.000	0.000
Tributyltin	0.015	0.018
2,4,5-Trichlorophenol	40.17	48.78
Zinc	165	200

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

HUMAN HEALTH

Aldrin	0.031	0.038
Alpha Hexachlorocyclohexane	0.95	1.16
Arsenic	0.00	0.00
Barium	0	0
Benzene	298.57	362.55
Benzidine	0.003	0.004
Benzo(a)anthracene	0.025	0.031
Benzo(a)pyrene	0.025	0.031
Beta Hexachlorocyclohexane	3.34	4.06
Bis(chloromethyl)ether	1.52	1.85
Cadmium	0.00	0.00
Carbon Tetrachloride	174.17	211.49
Chlordane	0.020	0.025
Chlorobenzene	4734	5749
Chloroform	11608.05	14095.48
Chromium	0	0
Chrysene	0.025	0.031
Cresols	44659	54229
Cyanide (Free)	0.00	0.00
4,4'-DDD	0.29	0.35
4,4'-DDE	0.05	0.06
4,4'-DDT	0.05	0.06
2,4-D	0.00	0.00
Danitol	0.69	0.84
Dibromochloromethane	14693.32	17841.89
1,2-Dibromoethane	1.10	1.34
Dieldrin	0.001	0.001
p-Dichlorobenzene	0.00	0.00
1,2-Dichloroethane	1716.80	2084.69
1,1-Dichloroethylene	83.64	101.56
Dicofol	0.21	0.25
Dioxins/Furans	7.00E-07	8.50E-07
Endrin	0.00	0.00
Flouride	0	0
Gamma Hexachlorocyclohexane	15.31	18.59
Heptachlor	0.017	0.021
Heptachlor Epoxide	7.07	8.59
Hexachlorobenzene	0.01	0.01
Hexachlorobutadiene	10.72	13.01
Hexachloroethane	90.05	109.35
Hexachlorophene	0.05	0.06
Lead	203.57	247.19
Mercury	0.012	0.014
Methoxychlor	0.00	0.00
Methyl Ethyl Ketone	848514	1030338
Mirex	0.02	0.02
Nitrate-Nitrogen	0	0
Nitrobenzene	689.98	837.83
N-Nitrosodiethylamine	7.35	8.92
N-Nitroso-di-n-Butylamine	12.92	15.69
PCB's	0.001	0.002
Pentachlorobenzene	1.06	1.29
Pentachlorophenol	130.15	158.04
Pyridine	12759.28	15493.41
Selenium	0.00	0.00
1,2,4,5-Tetrachlorobenzene	1.45	1.77
Tetrachloroethylene	1753.17	2128.85
Toxaphene	0.04	0.05
2,4,5-TP (Silvex)	0.00	0.00
2,4,5-Trichlorophenol	3848	4673
Trichloroethylene	0.00	0.00
1,1,1-Trichloroethane	0.00	0.00
TTHMs	0.00	0.00
Vinyl Chloride	90.43	109.81

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

TEXTOX MENU # 4 30 TAC 307 (7/13/95)

THE RECEIVING STREAM IS A LAKE OR RESERVOIR.

This is an intermittent discharge - acute criteria toxicity only is reviewed.

INPUT

Prepared By:	Kimberly Wilson
Permittee:	Southwestern Electric
Permit No.:	2496
Outfall No.:	3
Receiving Stream:	Brandy Branch Res.
Segment No.:	505
Segment Name:	Sabine River Above
TSS:	16.0
pH:	6.7
Hardness:	41.0
Chloride:	42.0
Critical Low Flow [7Q2] (cfs)	N/A
Harmonic Mean Flow (cfs)	N/A
Effluent Flow for Aquatic Life (MGD)	N/A
Percent Effluent for Human Health:	N/A
Percent Effluent for ZID:	60.0
Percent Effluent for Mixing Zone:	N/A
Fish Only (1) or Water & Fish (2) Option:	1

CALCULATE TOTAL/DISSOLVED RATIO

LAKE METAL	K _{po}	a	C _i /C _d	Fraction Dissolved	
Aluminum	N/A	N/A	1.00	1.00	Assumed
Arsenic	0.48	-0.73	2.01	0.50	
Cadmium	3.52	-0.92	5.39	0.19	
Chromium (Total)	2.17	-0.27	17.42	0.06	
Chromium (3+)	2.17	-0.27	17.42	0.06	
Chromium (6+)	N/A	N/A	1.00	1.00	Assumed
Copper	2.85	-0.9	4.76	0.21	
Lead	2.04	-0.53	8.51	0.12	
Mercury	N/A	N/A	1.00	1.00	
Nickel	2.21	-0.76	5.30	0.19	
Selenium	N/A	N/A	1.00	1.00	Assumed
Silver	2.4	-1.03	3.21	0.083	f(Cl)
Zinc	3.34	-0.68	9.11	0.11	

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM PERMIT LIMITS

CONSTITUENT	ACUTE STANDARD			DLY AVG (ug/l)	DLY MAX (ug/l)	MAL (ug/l)
	(ug/L)	WLAa	LTAa			
Aldrin	3	5.00	1.60	2.352	4.976	0.05
Aluminum	991	1651.67	528.53	776.944	1643.739	30
Arsenic	360	1208.84	386.83	568.639	1203.040	10
Cadmium	12.32	110.79	35.45	52.116	110.259	1
Carbaryl	2	3.33	1.07	1.568	3.317	5
Chlordane	2.4	4.00	1.28	1.882	3.981	0.15
Chlorpyrifos	0.083	0.14	0.04	0.065	0.138	0.05
Chromium (3+)	837	24295.94	7774.70	11428.810	24179.319	***
Chromium (6+)	16	26.67	8.53	12.544	26.539	10
Copper	8.29	65.74	21.04	30.925	65.426	10
Cyanide	45.78	76.30	24.42	35.892	75.934	20
4,4'-DDT	1.1	1.83	0.59	0.862	1.825	0.1
Demeton	1E+183	*****	*****	*****	*****	0.2
Dicofol	59.3	98.83	31.63	46.491	98.359	20
Dieldrin	2.5	4.17	1.33	1.960	4.147	0.1
Diuron	210	350.00	112.00	164.640	348.320	***
Endosulfan	0.22	0.37	0.12	0.172	0.365	0.1
Endrin	0.18	0.30	0.10	0.141	0.299	0.1
Guthion	1E+183	*****	*****	*****	*****	0.1
Heptachlor	0.52	0.87	0.28	0.408	0.863	0.05
Hexachlorocyclohexane	2	3.33	1.07	1.568	3.317	0.05
Lead	26.24	372.15	119.09	175.059	370.363	5
Malathion	1E+183	*****	*****	*****	*****	0.1
Mercury	2.4	4.00	1.28	1.882	3.981	0.2
Methoxychlor	1E+183	*****	*****	*****	*****	2
Mirex	1E+183	*****	*****	*****	*****	0.2
Nickel	667	5891.41	1885.25	2771.321	5863.134	10
PCBs (Total)	2	3.33	1.07	1.568	3.317	1
Parathion	0.065	0.11	0.03	0.051	0.108	0.1
Phenanthrene	30	50.00	16.00	23.520	49.760	10
Pentachlorophenol	6.71	11.18	3.58	5.260	11.129	50
Selenium	20	33.33	10.67	15.680	33.173	10
Silver	0.92	18.41	5.89	8.661	18.324	2
Toxaphene	0.78	1.30	0.42	0.612	1.294	5
Tributyltin	0.13	0.22	0.07	0.102	0.216	0.01
2,4,5-Trichlorophenol	136	226.67	72.53	106.624	225.579	50
Zinc	55	834.80	267.14	392.692	830.798	5

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

CALCULATE 70% AND 85% OF DAILY AVERAGE PERMIT LIMITS

<i>AQUATIC LIFE</i>	70%	85%
Aldrin	1.65	2.00
Aluminum	543.86	660.40
Arsenic	398.05	483.34
Cadmium	36.48	44.30
Carbaryl	1.10	1.33
Chlordane	1.32	1.60
Chlorpyrifos	0.05	0.06
Chromium (3+)	8000.17	9714.49
Chromium (6+)	8.78	10.66
Copper	21.65	26.29
Cyanide	25.12	30.51
4,4'-DDT	0.60	0.73
Demeton	*****	*****
Dieldrin	32.54	39.52
Diuron	1.37	1.67
Endosulfan	115.25	139.94
Endrin	0.12	0.15
Guthion	0.10	0.12
Heptachlor	*****	*****
Hexachlorocyclohexane	0.29	0.35
Lead	1.10	1.33
Malathion	122.54	148.80
Mercury	*****	*****
Methoxychlor	1.32	1.60
Mirex	*****	*****
Nickel	*****	*****
PCBs (Total)	1939.92	2355.62
Parathion	1.10	1.33
Phenanthrene	0.04	0.04
Pentachlorophenol	16.46	19.99
Selenium	3.68	4.47
Silver	10.98	13.33
Toxaphene	6.06	7.36
Tributyltin	0.43	0.52
2,4,5-Trichlorophenol	0.07	0.09
Zinc	74.64	90.63

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

TEXTTOX MENU # 2

THE RECEIVING STREAM IS AN INTERMITTENT STREAM WITHIN 3 MILES
OF A FRESHWATER PERENNIAL*This is an intermittent discharge - acute criteria toxicity only is reviewed.*

INPUT

Prepared By:	Kimberly Wilson
Permittee:	Southwestern Electric
Permit No.:	2496
Outfall No.:	004, 005
Receiving Stream:	Unnamed tributary
Segment No.:	505
Segment Name:	Sabine River Above
TSS:	16.0
pH:	6.7
Hardness:	41.0
Chloride:	42.0
Critical Low Flow [7Q2] (cfs)	0.3
Harmonic Mean Flow (cfs)	0.5
Effluent Flow for Aquatic Life (MGD)	Var
Percent Effluent for Human Health:	N/A
Percent Effluent for ZID:	100.0
Percent Effluent for Mixing Zone:	N/A

CALCULATE TOTAL/DISSOLVED RATIO

METAL	K _{po}	a	Ct/Cd	Fraction Dissolved	
Aluminum	N/A	N/A	1.00	1.00	Assumed
Arsenic	0.48	-0.73	2.01	0.50	
Cadmium	4	-1.13	3.79	0.26	
Chromium (Total)	3.36	-0.93	5.08	0.20	
Chromium (3+)	3.36	-0.93	5.08	0.20	
Chromium (6+)	N/A	N/A	1.00	1.00	Assumed
Copper	1.04	-0.74	3.14	0.32	
Lead	2.8	-0.8	5.88	0.17	
Mercury	N/A	N/A	1.00	1.00	
Nickel	0.49	-0.57	2.61	0.38	
Selenium	N/A	N/A	1.00	1.00	Assumed
Silver	2.4	-1.03	3.21	0.083	f(Cl)
Zinc	1.25	-0.7	3.87	0.26	

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM PERMIT LIMITS

CONSTITUENT	AQUATIC LIFE ACUTE STANDARD			DLY AVG (ug/l)	DLY MAX (ug/l)	MAL (ug/l)
	(ug/l)	WLAa	LTAa			
Aldrin	3	3.00	1.72	2.53	5.35	0.05
Aluminum	991	991	568	835	1766	30
Arsenic	360	725	416	611	1293	10
Cadmium	12.3	46.7	26.8	39.3	83.2	1
Carbaryl	2	2.00	1.15	1.68	3.56	5
Chlordane	2.4	2.40	1.38	2.02	4.28	0.15
Chlorpyrifos	0.083	0.083	0.048	0.070	0.148	0.05
Chromium (3+)	837	4250	2435	3580	7574	***
Chromium (6+)	16	16.00	9.17	13.48	28.51	10
Copper	8.29	26.00	14.90	21.90	46.34	10
Cyanide	45.78	45.78	26.23	38.56	81.58	20
4,4'-DDT	1.1	1.10	0.63	0.93	1.96	0.1
Demeton	*****	*****	0.00	0.00	0.00	0.2
Dicofol	59.3	59.30	33.98	49.95	105.67	20
Dieldrin	2.5	2.50	1.43	2.11	4.46	0.1
Diuron	210	210	120	177	374	***
Endosulfan	0.22	0.22	0.13	0.19	0.39	0.1
Endrin	0.18	0.18	0.10	0.15	0.32	0.1
Guthion	*****	*****	0.00	0.00	0.00	0.1
Heptachlor	0.52	0.52	0.30	0.44	0.93	0.05
Hexachlorocyclohexane	2	2.00	1.15	1.68	3.56	0.05
Lead	26	154	88	130	275	5
Malathion	*****	*****	0.00	0.00	0.00	0.1
Mercury	2.4	2.40	1.38	2.02	4.28	0.2
Methoxychlor	*****	*****	0.00	0.00	0.00	2
Mirex	*****	*****	0.00	0.00	0.00	0.2
Nickel	667	1744	999	1469	3108	10
Parathion	0.065	0.065	0.037	0.055	0.116	0.1
PCBs (Total)	2	2.00	1.15	1.68	3.56	1
Pentachlorophenol	6.71	6.71	3.84	5.65	11.96	50
Phenanthrene	30	30.00	17.19	25.27	53.46	10
Selenium	20	20.00	11.46	16.85	35.64	10
Silver	0.92	11.05	6.33	9.31	19.69	2
Toxaphene	0.78	0.78	0.45	0.66	1.39	5
Tributyltin	0.13	0.13	0.074	0.11	0.23	0.01
2,4,5-Trichlorophenol	136	136	78	115	242	50
Zinc	55	213	122	179	379	5

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

CALCULATE 70% and 85% OF DAILY AVERAGE PERMIT LIMITS

CONSTITUENT	70%	85%
Aldrin	1.77	2.15
Aluminum	584	710
Arsenic	428	519
Cadmium	28	33
Carbaryl	1.18	1.43
Chlordane	1.42	1.72
Chlorpyrifos	0.049	0.059
Chromium (3+)	2506	3043
Chromium (6+)	9.43	11.46
Copper	15.33	18.62
Cyanide	26.99	32.78
4,4'-DDT	0.65	0.79
Demeton	0.00	0.00
Dicofol	34.96	42.46
Dieldrin	1.47	1.79
Diuron	123.82	150.35
Endosulfan	0.13	0.16
Endrin	0.11	0.13
Heptachlor	0.31	0.37
Hexachlorocyclohexane	1.18	1.43
Lead	91	110
Mercury	1.42	1.72
Nickel	1028	1249
Parathion	0.038	0.047
PCBs (Total)	1.18	1.43
Pentachlorophenol	3.96	4.80
Phenanthrene	17.69	21.48
Selenium	11.79	14.32
Silver	6.51	7.91
Toxaphene	0.46	0.56
Tributyltin	0.077	0.093
2,4,5-Trichlorophenol	80	97
Zinc	126	152

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

TEXTOX MENU # 2 (FRESHWATER) 30 TAC 307 (7/13/95)

THE RECEIVING STREAM IS AN INTERMITTENT STREAM WITHIN 3 MILES
OF A FRESHWATER PERENNIAL.

INPUT

Prepared By:	Kimberly Wilson
Permittee:	Southwestern Electric
Permit No.:	2496
Outfall No.:	6
Receiving Stream:	Unnamed trib. Haltey
Segment No.:	505
Segment Name:	Sabine River Above Toledo
TSS:	16.0
pH:	6.7
Hardness:	41.0
Chloride:	42.0
Critical Low Flow [7Q2] (cfs)	0.3
Harmonic Mean Flow (cfs)	0.5
Effluent Flow for Aquatic Life (MGD)	2.0
Percent Effluent for Human Health:	78.50
Percent Effluent for ZID:	100.0
Percent Effluent for Mixing Zone:	92.10
Fish Only (1) or Water & Fish (2) Option:	1
Perennial River (1) or Lake (2) Option:	1

CALCULATE TOTAL/DISSOLVED RATIO

STREAM OR RIVER

METAL	K _{po}	a	Ct/Cd	Fraction Dissolved	
Aluminum	N/A	N/A	1.00	1.00	Assumed
Arsenic	0.48	-0.73	2.01	0.50	
Cadmium	4	-1.13	3.79	0.26	
Chromium (Total)	3.36	-0.93	5.08	0.20	
Chromium (3+)	3.36	-0.93	5.08	0.20	
Chromium (6+)	N/A	N/A	1.00	1.00	Assumed
Copper	1.04	-0.74	3.14	0.32	
Lead	2.8	-0.8	5.88	0.17	
Mercury	N/A	N/A	1.00	1.00	
Nickel	0.49	-0.57	2.61	0.38	
Selenium	N/A	N/A	1.00	1.00	Assumed
Silver	2.4	-1.03	3.21	0.083	f(Cl)
Zinc	1.25	-0.7	3.87	0.26	

LAKE

METAL	K _{po}	a	Ct/Cd	Fraction Dissolved	
Aluminum	N/A	N/A	1.00	1.00	Assumed
Arsenic	0.48	-0.73	2.01	0.50	
Cadmium	3.52	-0.92	5.39	0.19	
Chromium (Total)	2.17	-0.27	17.42	0.06	
Chromium (3+)	2.17	-0.27	17.42	0.06	
Chromium (6+)	N/A	N/A	1.00	1.00	Assumed
Copper	2.85	-0.9	4.76	0.21	
Lead	2.04	-0.53	8.51	0.12	
Mercury	1.97	-1.17	2.23	0.45	
Nickel	2.21	-0.76	5.30	0.19	
Selenium	N/A	N/A	1.00	1.00	Assumed
Silver	2.4	-1.03	3.21	0.083	f(Cl)
Zinc	3.34	-0.68	9.11	0.11	

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM PERMIT LIMIT

CONSTITUENT	ACUTE CHRONIC		WLAa	WLAc	LTAA	LTAc	DLY AVG	DLY MAX	MAL
	STANDARD	STANDARD							
	(ug/L)	(ug/L)					(ug/l)	(ug/l)	(ug/l)
Aldrin	3	1E+183	3.000	*****	1.719	*****	2.527	5.346	0.05
Aluminum	991	1E+183	991	*****	568	*****	835	1766	30
Arsenic	360	190	725	416	416	320	470	995	10
Cadmium	12.32	0.56	46.7	2.3	26.76	1.8	2.62	5.55	1
Carbaryl	2	1E+183	2.000	*****	1.146	*****	1.685	3.564	5
Chlordane	2.4	0.0043	2.400	0.005	1.375	0.00	0.005	0.011	0.15
Chlorpyrifos	0.083	0.041	0.083	0.045	0.048	0.03	0.050	0.107	0.05
Chromium (3+)	837	100	4249.968	550.0	2435	424	623	1317	***
Chromium (6+)	16	11	16.00	11.94	9.17	9.2	13.48	28.51	10
Copper	8.29	5.97	26.00	20.35	14.90	15.67	21.90	46.34	10
Cyanide	45.78	10.69	45.78	11.61	26.23	8.94	13.14	27.80	20
4,4'-DDT	1.1	0.001	1.100	0.001	0.630	0.001	0.001	0.003	0.1
Demeton	1E+183	0.1	*****	0.109	*****	0.084	0.123	0.260	0.2
Dicofol	59.3	19.8	59.30	21.50	33.98	16.55	24.33	51.48	20
Dieldrin	2.5	0.0019	2.500	0.002	1.433	0.002	0.002	0.005	0.1
Diuron	210	70	210	76	120	59	86	182.0	***
Endosulfan	0.22	0.056	0.220	0.061	0.126	0.047	0.069	0.146	0.1
Endrin	0.18	0.0023	0.180	0.002	0.103	0.002	0.003	0.006	0.1
Guthion	1E+183	0.01	*****	0.011	*****	0.008	0.012	0.026	0.1
Heptachlor	0.52	0.0038	0.520	0.004	0.298	0.003	0.005	0.010	0.05
Hexachlorocyclohexane	2	0.08	2.000	0.087	1.146	0.067	0.098	0.208	0.05
Lead	26.24	1.02	154.18	6.52	88.34	5.02	7.38	15.62	5
Malathion	1E+183	0.01	*****	0.011	*****	0.008	0.012	0.026	0.1
Mercury	2.4	1.3	2.400	1.412	1.375	1.087	1.598	3.380	0.2
Methoxychlor	1E+183	0.03	*****	0.033	*****	0.025	0.037	0.078	2
Mirex	1E+183	0.001	*****	0.001	*****	0.001	0.001	0.003	0.2
Nickel	667	74	1744	210	999	162	238	504	10
PCBs (Total)	2	0.014	2.000	0.015	1.146	0.012	0.017	0.036	1
Parathion	0.065	0.013	0.065	0.014	0.037	0.011	0.016	0.034	0.1
Phenanthrene	30	30	30.0	32.6	17.2	25.081	25.3	53.5	10
Pentachlorophenol	6.71	4.24	6.71	4.60	3.84	3.541	5.21	11.01	50
Selenium	20	5	20.0	5.4	11.5	4.2	6.1	13.0	10
Silver	0.92	*****	11.05	*****	6.330	*****	9.305	19.687	2
Toxaphene	0.78	0.0002	0.780	0.0002	0.447	0.0002	0.0002	0.0005	5
Tributyltin	0.13	0.024	0.130	0.026	0.074	0.020	0.029	0.062	0.01
2,4,5-Trichlorophenol	136	64	136	69	78	54	79	166	50
Zinc	55	50	213	209	122	161	179	379	5

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

HUMAN HEALTH

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM PERMIT LIMIT

CONSTITUENT	Fish Only (ug/l)	Water and Fish (ug/l)	WLAh	LTAh	DLY AVG (ug/l)	DLY MAX (ug/l)	MAL (ug/l)
Aldrin	0.0327	0.0312	0.042	0.039	0.057	0.120	0.05
Alpha Hexachlorocyclohexane	0.997	0.645	1.270	1.181	1.736	3.673	0.05
Arsenic	*****	50	0.0	0.0	0.0	0.0	10
Barium	*****	2000	0	0	0	0	10
Benzene	312	5	397.5	369.6	543.4	1149.6	10
Benzidine	0.0035	0.0011	0.004	0.004	0.006	0.013	50
Benzo(a)anthracene	0.0265	0.0261	0.034	0.031	0.046	0.098	10
Benzo(a)pyrene	0.0265	0.0261	0.034	0.031	0.046	0.098	10
Beta Hexachlorocyclohexane	3.49	2.26	4.446	4.135	6.078	12.859	0.05
Bis(chloromethyl)ether	1.59	0.0207	2.025	1.884	2.769	5.858	***
Cadmium	*****	5	0.0	0.00	0.00	0.00	1
Carbon Tetrachloride	182	5	231.85	215.62	316.96	670.57	10
Chlordane	0.0213	0.021	0.027	0.025	0.037	0.078	0.15
Chlorobenzene	4947	1305	6302	5861	8615	18227	10
Chloroform	12130	*****	15452	14371	21125	44692	10
Chromium	*****	100	0.0	0	0	0	10
Chrysene	0.0265	0.0261	0.034	0.031	0.046	0.098	10
Cresols	46667	4049	59448	55287	81272	171943	10
Cyanide (Free)	*****	200	0.0	0.0	0.0	0.0	20
4,4'-DDD	0.299	0.297	0.381	0.354	0.521	1.102	0.1
4,4'-DDE	0.0545	0.0544	0.069	0.065	0.095	0.201	0.1
4,4'-DDT	0.0528	0.0527	0.067	0.063	0.092	0.195	0.1
2,4-D	*****	70	0.0	0.0	0.0	0.0	10
Danitol	0.721	0.709	0.918	0.854	1.256	2.656	***
Dibromochloromethane	15354	100	19559.2	18190.1	26739.4	56571.2	10
1,2-Dibromoethane	1.15	0.0518	1.465	1.362	2.003	4.237	2
Dieldrin	0.0012	0.0012	0.002	0.001	0.002	0.004	0.1
p-Dichlorobenzene	*****	75	0.0	0.0	0.0	0.0	10
1,2-Dichloroethane	1794	5	2285.4	2125.4	3124.3	6609.9	10
1,1-Dichloroethylene	87.4	7	111.338	103.544	152.210	322.022	10
Dicofol	0.217	0.215	0.276	0.257	0.378	0.800	20
Dioxins/Furans	1.00E-06	1.00E-06	1.27E-06	1.18E-06	1.27E-06	3.68E-06	10
Endrin	*****	2	0.000	0.000	0.000	0.000	0.1
Flouride	*****	4000	0	0	0	0	500
Gamma Hexachlorocyclohexane	16	0.2	20.382	18.955	27.864	58.951	0.05
Heptachlor	0.0181	0.0177	0.023	0.021	0.032	0.067	0.05
Heptachlor Epoxide	7.39	0.2	9.414	8.755	12.870	27.228	1
Hexachlorobenzene	0.0129	0.0129	0.016	0.015	0.022	0.048	10
Hexachlorobutadiene	11.2	9.34	14.268	13.269	19.505	41.266	10
Hexachloroethane	94.1	84.4	119.9	111.5	163.9	346.7	20
Hexachlorophene	0.0532	0.0531	0.068	0.063	0.093	0.196	10
Lead	25	5	187.1	174.007	255.791	541.163	5
Mercury	0.0122	0.0122	0.016	0.014	0.021	0.045	0.2
Methoxychlor	*****	40	0.000	0.000	0.000	0.000	2
Methyl Ethyl Ketone	886667	4411	1129512	1050446	1544156	3266888	50
Mirex	0.0189	0.0171	0.024	0.022	0.033	0.070	0.2
Nitrate-Nitrogen	*****	10000	0	0	0	0	1000
Nitrobenzene	721	41.8	918.5	854.2	1255.6	2656.5	10
N-Nitrosodiethylamine	7.68	0.0382	9.783	9.099	13.375	28.297	20
N-Nitroso-di-n-Butylamine	13.5	1.84	17.197	15.994	23.511	49.740	20
PCB's	0.0013	0.0013	0.002	0.002	0.002	0.005	1
Pentachlorobenzene	1.11	1.09	1.414	1.315	1.933	4.090	20
Pentachlorophenol	136	129	173.2	161.1	236.8	501.1	50
Pyridine	13333	88.1	16984.7	15795.8	23219.8	49124.9	20
Selenium	*****	50	0.0	0.0	0.0	0.0	10
1,2,4,5-Tetrachlorobenzene	1.52	1.43	1.936	1.801	2.647	5.600	20
Tetrachloroethylene	1832	5	2333.8	2170.4	3190.5	6749.9	10
Toxaphene	0.0445	0.044	0.057	0.053	0.077	0.164	5
2,4,5-TP (Silvex)	*****	50	0.0	0.0	0.0	0.0	2
2,4,5-Trichlorophenol	4021	2767	5122	4764	7003	14815	50
Trichloroethylene	*****	5	0.000	0.000	0.000	0.000	10
1,1,1-Trichloroethane	*****	200	0.0	0.0	0.0	0.0	10
TTHMs	*****	100	0.0	0.0	0.0	0.0	10
Vinyl Chloride	94.5	2	120.382	111.955	164.574	348.181	10

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

CALCULATE 70% AND 85% OF DAILY AVERAGE PERMIT LIMITS

<i>AQUATIC LIFE</i>	70%	85%
Aldrin	1.77	2.15
Aluminum	584	710
Arsenic	329	400
Cadmium	1.84	2.23
Carbaryl	1.18	1.43
Chlordane	0.004	0.004
Chlorpyrifos	0.035	0.043
Chromium (3+)	436	529
Chromium (6+)	9.43	11.46
Copper	15.33	18.62
Cyanide	9.20	11.17
4,4'-DDT	0.001	0.001
Demeton	0.086	0.104
Dicofol	17.034	20.684
Dieldrin	0.002	0.002
Diuron	60.221	73.125
Endosulfan	0.048	0.058
Endrin	0.002	0.002
Guthion	0.009	0.010
Heptachlor	0.003	0.004
Hexachlorocyclohexane	0.07	0.08
Lead	5.17	6.28
Malathion	0.009	0.010
Mercury	1.12	1.36
Methoxychlor	0.03	0.03
Mirex	0.001	0.001
Nickel	167	203
PCBs (Total)	0.012	0.015
Parathion	0.011	0.014
Phenanthrene	17.69	21.48
Pentachlorophenol	3.64	4.42
Selenium	4.30	5.22
Silver	6.51	7.91
Toxaphene	0.000	0.000
Tributyltin	0.021	0.025
2,4,5-Trichlorophenol	55.06	66.86
Zinc	126	152

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

HUMAN HEALTH

Aldrin	0.040	0.048
Alpha Hexachlorocyclohexane	1.22	1.48
Arsenic	0.00	0.00
Barium	0	0
Benzene	380.35	461.85
Benzidine	0.004	0.005
Benzo(a)anthracene	0.032	0.039
Benzo(a)pyrene	0.032	0.039
Beta Hexachlorocyclohexane	4.25	5.17
Bis(chloromethyl)ether	1.94	2.35
Cadmium	0.00	0.00
Carbon Tetrachloride	221.87	269.41
Chlordane	0.026	0.032
Chlorobenzene	6031	7323
Chloroform	14787.32	17956.03
Chromium	0	0
Chrysene	0.032	0.039
Cresols	56890	69081
Cyanide (Free)	0.00	0.00
4,4'-DDD	0.36	0.44
4,4'-DDE	0.07	0.08
4,4'-DDT	0.06	0.08
2,4-D	0.00	0.00
Danitrol	0.88	1.07
Dibromochloromethane	18717.60	22728.52
1,2-Dibromoethane	1.40	1.70
Dieldrin	0.001	0.002
p-Dichlorobenzene	0.00	0.00
1,2-Dichloroethane	2187.01	2655.66
1,1-Dichloroethylene	106.55	129.38
Dicofol	0.26	0.32
Dioxins/Furans	8.92E-07	1.08E-06
Endrin	0.00	0.00
Flouride	0	0
Gamma Hexachlorocyclohexane	19.51	23.68
Heptachlor	0.022	0.027
Heptachlor Epoxide	9.01	10.94
Hexachlorobenzene	0.016	0.019
Hexachlorobutadiene	13.65	16.58
Hexachloroethane	114.71	139.30
Hexachlorophene	0.06	0.08
Lead	179.05	217.42
Mercury	0.015	0.018
Methoxychlor	0.00	0.00
Methyl Ethyl Ketone	1080909	1312533
Mirex	0.02	0.03
Nitrate-Nitrogen	0	0
Nitrobenzene	878.95	1067.30
N-Nitrosodiethylamine	9.36	11.37
N-Nitroso-di-n-Butylamine	16.46	19.98
PCB's	0.0016	0.0019
Pentachlorobenzene	1.35	1.64
Pentachlorophenol	165.79	201.32
Pyridine	16253.86	19736.83
Selenium	0.00	0.00
1,2,4,5-Tetrachlorobenzene	1.85	2.25
Tetrachloroethylene	2233.34	2711.91
Toxaphene	0.05	0.07
2,4,5-TP (Silvex)	0.00	0.00
2,4,5-Trichlorophenol	4902	5952
Trichloroethylene	0.00	0.00
1,1,1-Trichloroethane	0.00	0.00
TTHMs	0.00	0.00
Vinyl Chloride	115.20	139.89



TPDES PERMIT NO. 02496
[For TCEQ office use only -
EPA I.D. No. TX0087726]

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P. O. Box 13087
Austin, Texas 78711-3087

This permit supercedes and replaces
TPDES Permit No. 02496, issued on
December 31, 1999.

PERMIT TO DISPOSE OF WASTES
under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

Southwestern Electric Power Company

whose mailing address is

2400 Farm-to-Market Road 3251
Hallsville, Texas 75650-7634

is authorized to treat and dispose of wastes from from the Henry W. Pirkey Power Plant (SIC 4911)

located adjacent to Red Oak Road at a point approximately six miles southeast of the City of Hallsville, Harrison County, Texas

via Outfalls 002 and 003, to Brandy Branch Reservoir; thence to Brandy Branch Creek; thence to the Sabine River Above Toledo Bend Reservoir in Segment 0505 of the Sabine River Basin; and via Outfalls 004, 005, and 006 to unnamed tributaries of Hatley Creek; thence to Hatley Creek; thence to the Sabine River Above Toledo Bend Reservoir in Segment No. 0505 of the Sabine River Basin

only according to effluent limitations, monitoring requirements and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight on April 1, 2006.

ISSUED DATE:

For the Commission

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTSOutfall Number 002

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge once through cooling water (*1) and previously monitored effluents subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 600 million gallons per day (MGD). The daily maximum flow shall not exceed 600 MGD.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average lbs/day	Daily Maximum lbs/day	(mg/L)	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency Sample Type
Flow (MGD)	(Report)	(Report)		N/A	1/day Estimate
Temperature (°F)	(Report)	(122)		N/A	1/day In-situ
Total Residual Chlorine (*1)	N/A	75.6	0.2	N/A	1/week (*2) Grab

(*1) See Other Requirements No. 3.

(*2) Samples shall be representative of periods of chlorination. Sampling is only required when there is chlorination during a calendar week.

2. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
3. Effluent monitoring samples shall be taken at the following location: At Outfall 002, where condenser cooling water and previously monitored effluents are discharged from the discharge canal to Brandy Branch Reservoir.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTSOutfall Number 102

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge low volume wastewater (*1), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Minimum Self-Monitoring Requirements</u>	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow (MGD)	(Report)	(Report)	N/A	1/day (*2)	Estimate
Total Suspended Solids	30	100	100	1/quarter (*2)	Grab (*3)
Oil and Grease	15	20	20	1/quarter (*2)	Grab (*3)
Selenium, Total	0.012	0.025	0.025	1/month (*2)	Grab (*3)

(*1) See Other Requirements No. 3.

(*2) When discharge occurs.

(*3) For total suspended solids, oil and grease, and total selenium: since more than one source is associated with this particular waste category, grab samples from each source shall be either physically or arithmetically composited into a single flow weighted sample for analysis and/or reporting. For pH, samples from each source shall be analyzed separately and the highest and lowest results reported.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*2), by grab sample (*3).
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location: At Outfall 102, where low volume wastewaters are discharged from the collector pit and/or the low pressure service water system prior to mixing with other waters.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTSOutfall Number 202

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge Plant "X" treated effluent (*1), subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 0.8 million gallons per day (MGD). The daily maximum flow shall not exceed 0.8 MGD.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow (MGD)	(Report)	(Report)	N/A	1/day (*2)	Estimate
Total Suspended Solids	30	100	100	1/week (*2)	Grab
Oil and Grease	15	20	20	1/week (*2)	Grab
Selenium, Total	0.016	0.033	0.033	1/day (*2)	Grab
Iron, Total (*3)	1.0	1.0	1.0	1/week (*2)	Grab
Copper, Total (*3)	0.5	1.0	1.0	1/week (*2)	Grab

(*1) See Other Requirements No. 6.

(*2) When discharge occurs.

(*3) Effluent limits apply to the discharge of metal cleaning waste only, and shall be monitored only discharging metal cleaning waste or chemical metal cleaning waste.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*2), by grab sample.
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location: At Outfall 202, after the final Plant "X" treatment prior to mixing with other waters.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTSOutfall Number 302

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge domestic wastewater subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 0.015 million gallons per day (MGD). The daily maximum flow shall not exceed 0.030 MGD.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average lbs/day (mg/L)		Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency Sample Type
Flow (MGD)	(Report)		(Report)	N/A	1/day Estimate
Biochemical Oxygen Demand (5-day)	2.5	20	65	65	1/2 months Grab (*1)
Total Suspended Solids	2.5	20	65	65	1/2 months Grab (*1)
Total Chlorine Residual	N/A	1.0 (min)	Report (max)	N/A	1/week Grab (*1)

- (*1) For total suspended solids, oil and grease, and total selenium: since more than one source is associated with this particular waste category, grab samples from each source shall be either physically or arithmetically composited into a single flow weighted sample for analysis and/or reporting. For pH, samples from each source shall be analyzed separately and the highest and lowest results reported.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week, by grab sample (*1).
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location: At Outfall 302, after the final treatment unit prior to mixing with other waters.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTSOutfall Number 003

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge wastewater from the Lignite Runoff Pond (*1) (*2), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Minimum Self-Monitoring Requirements</u>	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow (MGD)	(Report)	(Report)	N/A	1/week (*3)	Estimate
Total Suspended Solids	N/A	50	50	1/month (*3)	Grab
Oil and Grease	N/A	20	20	1/year (*3)	Grab
Selenium, Total	N/A	0.033	0.033	1/week (*3)	Grab

(*1) See Other Requirements No. 5.

(*2) These wastes may be routed to the Plant "X" treatment plant and discharged via Outfall 202.

(*3) When discharge occurs.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*3), by grab sample.
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location: At Outfall 003, where wastewater discharges from the Lignite Runoff Pond to Brandy Branch Reservoir.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTSOutfall Number 004

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge wastewater from the Flue Gas Desuphurization/Fly Ash Landfill Retention Pond (*1) (*2), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow (MGD)	(Report)	(Report)	N/A	1/week (*3)	Estimate
Total Suspended Solids	N/A	100	100	1/month (*3)	Grab
Oil and Grease	N/A	20	20	1/year (*3)	Grab
Selenium, Total	N/A	0.036	0.036	1/week (*3)	Grab

(*1) See Other Requirements No. 5.

(*2) These wastes may be routed to the Plant "X" treatment plant and discharged via Outfall 202.

(*3) When discharge occurs.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*3), by grab sample.
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location: At Outfall 004, where wastewater discharges from the Flue Gas Desuphurization/Fly Ash Landfill Retention Pond to an unnamed tributary of Hatley Creek.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTSOutfall Number 005

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge wastewater from the Limestone Runoff Pond (*1), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Minimum Self-Monitoring Requirements</u>	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow (MGD)	(Report)	(Report)	N/A	1/week (*2)	Estimate
Total Suspended Solids	N/A	50	50	1/month (*2)	Grab
Oil and Grease	N/A	20	20	1/year (*2)	

(*1) See Other Requirements No. 5.

(*2) When discharge occurs.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*2), by grab sample.
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location: At Outfall 005, where wastewater discharges from the Limestone Runoff Pond to an unnamed tributary of Hatley Creek.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTSOutfall Number 006

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge wastewater from the Ash Pond (*1) (*2), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Minimum Self-Monitoring Requirements</u>	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow (MGD)	(Report)	(Report)	N/A	1/day (*3)	Estimate
Total Suspended Solids	30	100	100	1/month (*3)	Grab
Oil and Grease	15	20	20	1/month (*3)	Grab
Selenium, Total (*4)	0.017	0.036	0.036	1/week (*3)	Grab
Selenium, Total (*5)	0.006	0.013	0.013	1/week (*3)	Grab

(*1) See Other Requirements No. 5.

(*2) These wastes may be routed to Plant "X" treatment plant and discharge via Outfall 202.

(*3) When discharge occurs.

(*4) Effluent limitations effective beginning upon date of issuance and lasting 2 years, 364 days. See Other Requirements No. 12.

(*5) Effluent limitations effective beginning 2 years, 365 days from issuance, and lasting through date of expiration. See Other Requirements No. 12.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*3), by grab sample.
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location: At Outfall 006, where commingled wastewater are discharged from the Ash Pond to an unnamed tributary of Hatley Creek.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC §§ 305.121 - 305.129, Subchapter F, "Permit Characteristics and Conditions" as promulgated under the Texas Water Code §§ 5.103 and 5.105, and the Texas Health and Safety Code §§ 361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in Section 26.001 of the Texas Water Code and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some Specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

- a. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder and limited to major domestic wastewater discharge facilities with a 1 million gallons per day or greater permitted flow.
- b. Daily average flow - the arithmetic average of all determinations of the daily discharge within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily discharge, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.
- c. Daily maximum flow - the highest total flow for any 24-hour period in a calendar month.
- d. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.
- e. 2-hour peak flow (domestic wastewater treatment plants) - the maximum flow sustained for a two-hour period during the period of daily discharge. Multiple measurements of instantaneous maximum flow within a two-hour period may be compared to the permitted 2-hour peak flow.
- f. Maximum 2-hour peak flow (domestic wastewater treatment plants) - the highest 2-hour peak flow for any 24-hour period in a calendar month.

2. Concentration Measurements

- a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements. When four samples are not available in a calendar month, the arithmetic average of the four most recent measurements or the arithmetic average (weighted by flow) of all values taken during the month shall be used as the daily average concentration.
- b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.
- c. Daily maximum concentration - the maximum concentration measured on a single day, by composite sample unless otherwise specified elsewhere in this permit, within a period of one calendar month.
- d. Daily discharge - the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the sampling day.

The "daily discharge" determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the "daily discharge" determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

- e. Fecal coliform bacteria concentration - the number of colonies of fecal coliform bacteria per 100 milliliters effluent. The fecal coliform bacteria daily average is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the n th root of the product of all measurements made in a particular period of time. For example in a month's time, where n equals the number of

measurements made; or, computed as the antilogarithm of the sum of the logarithm of each measurement made. For any measurement of fecal coliform bacteria equaling zero, a substituted value of one shall be made for input into either computation method.

3. Sample Type

- a. Composite sample - for domestic wastewater a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected no closer than two hours apart. For industrial wastewater a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected no closer than one hour apart.
 - b. Grab sample - an individual sample collected in less than 15 minutes.
4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation and/or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.
 5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids which have not been classified as hazardous waste separated from wastewater by unit processes.
 6. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 - 319.12. Unless otherwise specified, a monthly effluent report shall be submitted each month, to the location(s) specified on the reporting form or the instruction sheet, by the 20th day of the following month for each discharge which is described by this permit whether or not a discharge is made for that month. Monitoring results must be reported on the approved TPDES self-report form, Discharge Monitoring Report (DMR) Form EPA No. 3320-1, signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act, the Texas Water Code, Chapters 26, 27, and 28, and Texas Health and Safety Code, Chapter 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§ 319.11 - 319.12. Measurements, tests and calculations shall be accurately accomplished in a representative manner.

3. Records of Results

- a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.
- b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR § 264.73(b)(9) shall be retained at the facility site and/or shall be readily available for review by

a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.

c. Records of monitoring activities shall include the following:

- i. date, time and place of sample or measurement;
- ii. identity of individual who collected the sample or made the measurement.
- iii. date and time of analysis;
- iv. identity of the individual and laboratory who performed the analysis;
- v. the technique or method of analysis; and
- vi. the results of the analysis or measurement and quality assurance/quality control records.

The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that maybe instituted against the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved TPDES self-report form. Increased frequency of sampling shall be indicated on the self-report form.

5. Calibration of Instruments

All automatic flow measuring and/or recording devices and/or totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the Regional Office and the Manager of the Enforcement Section III (MC 149) of the Enforcement Division.

7. Noncompliance Notification

- a. In accordance with 30 TAC § 305.125(9) any noncompliance which may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Manager of the Enforcement Section III (MC 149) of the Enforcement Division within five working days of becoming aware of the noncompliance. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.
- b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:
 - i. Unauthorized discharges as defined in Permit Condition 2(g).
 - ii. Any unanticipated bypass which exceeds any effluent limitation in the permit.
 - iii. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

- c. In addition to the above, any effluent violation which deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Manager of the Enforcement Section III (MC 149) of the Enforcement Division within 5 working days of becoming aware of the noncompliance.
 - d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Water Quality Compliance Monitoring Team (MC 224) of the Enforcement Division as promptly as possible. This requirement means to report these types of noncompliance on the approved TPDES self-report form.
8. In accordance with the procedures described in 30 TAC §§ 305.21, 305.22 and 305.23 (relating to Emergency Orders, Temporary Orders and Executive Director Authorizations) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.
9. Changes in Discharges of Toxic Substances

All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Manager of the Enforcement Section III (MC 149) of the Enforcement Division in writing within five (5) working days, after becoming aware of or having reason to believe:

- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - i. One hundred micrograms per liter (100 µg/L);
 - ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or
 - iv. The level established by the TCEQ.
- b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - i. Five hundred micrograms per liter (500 µg/L);
 - ii. One milligram per liter (1 mg/L) for antimony;
 - iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or
 - iv. The level established by the TCEQ.

10. Signatories to Reports

All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).

11. All POTWs must provide adequate notice to the Executive Director of the following:

- a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the CWA if it were directly discharging those pollutants;
- b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and
- c. For the purpose of this paragraph, adequate notice shall include information on:
 - i. The quality and quantity of effluent introduced into the POTW; and
 - ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS**1. General**

- a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.
- b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application in accordance with 30 TAC Chapter 50 and the application process in accordance with 30 TAC Chapter 281, and relying upon the accuracy and completeness of that information and those representations in accordance with 30 TAC Chapter 305. After notice in accordance with 30 TAC Chapter 39 and opportunity for a hearing in accordance with 30 TAC §§ 55.21 - 55.31, Subchapter B, "Hearing Requests, Public Comment", this permit may be modified, suspended, or revoked, in whole or in part in accordance with 30 TAC Chapter 305 Subchapter D, during its term for cause including but not limited to, the following:
 - i. Violation of any terms or conditions of this permit;
 - ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
 - iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
- c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

- a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.
- b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation or suspension, or for denial of a permit renewal application or of an application for a permit for another facility.
- c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.
- d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation which has a reasonable likelihood of adversely affecting human health or the environment.
- e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.
- f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§ 305.62 and 305.66 and the Texas Water Code Section 7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to waters in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.
- h. In accordance with 30 TAC § 305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility which does not cause permitted effluent limitations to be exceeded, but only if the diversion is also for essential maintenance to assure efficient operation.
- i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under Texas Water Code §§ 26.136, 26.212, and 26.213 for violations including but not limited to negligently or knowingly violating the federal Clean Water Act, §§ 301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections

in a permit issued under the CWA § 402, or any requirement imposed in a pretreatment program approved under the CWA §§ 402 (a)(3) or 402 (b)(8).

3. Inspections and Entry

- a. Inspection and entry shall be allowed as prescribed in the Texas Water Code Chapters 26, 27, and 28, and Texas Health and Safety Code Chapter 361.
- b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in Texas Water Code Section 7.002.

4. Permit Amendment and/or Renewal

- a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:
 - i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC § 305.534 (relating to New Sources and New Dischargers); or
 - ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 8 and as adopted by 30 TAC § 305.531(a) (relating to Establishing and Calculating Additional Conditions and Limitations for TPDES Permits);
 - iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. Prior to any facility modifications, additions and/or expansions of a permitted facility that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.
- c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. Authorization to continue such activity will terminate upon the effective denial of said application.
- d. Prior to accepting or generating wastes which are not described in the permit application or which would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.
- e. In accordance with the Texas Water Code § 26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.
- f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the Clean Water Act for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic

pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

- a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Water Quality Applications Team (MC 161) of the Registration, Review & Reporting Division.
- b. A permit may be transferred only according to the provisions of 30 TAC § 305.64 (relating to Transfer of Permits) and 30 TAC § 50.33 (relating to Executive Director Action on Application for Transfer).

6. Relationship to Hazardous Waste Activities

This permit does not authorize any activity of hazardous waste storage, processing, or disposal which requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Relationship to Water Rights

Disposal of treated effluent by any means other than discharge directly to the waters in the state must be specifically authorized in this permit and may require a permit pursuant to Chapter 11 of the Texas Water Code.

8. Property Rights

A permit does not convey any property rights of any sort, or any exclusive privilege.

9. Permit Enforceability

The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control such as the Commission's "Recommendations for Minimum Process Control Tests for Domestic Wastewater Treatment Facilities." Process control records shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.
2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all provisions of 30 TAC §§ 312.1 - 312.13 concerning sewage sludge use and disposal and 30 TAC §§ 319.21 - 319.29 concerning the discharge of certain hazardous metals.
3. Domestic wastewater treatment facilities shall comply with the following provisions:
 - a. The permittee shall notify the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing of any closure activity or facility expansion at least 90 days prior to conducting such activity.
 - b. Closure activities include those associated with any pit, tank, pond, lagoon, or surface impoundment regulated by this permit.

- c. As part of the notification, the permittee shall submit to the Municipal Permits Team (MC 148) of the Wastewater Permitting Section of the Water Quality Division, a closure plan which has been developed in accordance with the "Closure Guidance Documents Nos. 4 and 5" available through the Publications Inventory and Distribution Section (MC 195) of the Agency Communications Division.
4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, and/or retention of inadequately treated wastewater.
5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.
6. The permittee shall remit an annual waste treatment fee to the Commission as required by 30 TAC Chapter 305 Subchapter M and an annual water quality assessment fee to the Commission as required by 30 TAC Chapter 320. Failure to pay either fee may result in revocation of this permit.

7. Documentation

For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for applications, effluent data, permits, and other data specified in 30 TAC § 305.46, any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice.

8. Facilities which generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.

- a. Whenever flow measurements for any domestic sewage treatment facility reach 75 percent of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the domestic wastewater treatment and/or collection facilities. Whenever the flow reaches 90 percent of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment and/or collection facilities. In the case of a domestic wastewater treatment facility which reaches 75 percent of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

If in the judgement of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 149) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

- b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission, and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.
- c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 325.
10. For publicly owned treatment works, the 30-day average (or Monthly average) percent removal for BOD and TSS shall not be less than 85 percent, unless otherwise authorized by this permit.
11. Facilities which generate industrial solid waste as defined in 30 TAC § 335.1 shall comply with these provisions:
 - a. Any solid waste generated by the permittee during the management and treatment of wastewater, as defined in 30 TAC § 335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid) must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.
 - b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.
 - c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC § 335.6(g), to the Corrective Action Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.
 - d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration & Reporting Section (MC 129) of the Registration, Review & Reporting Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC § 335.5.
 - e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.
 - f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC Chapter 335 and must include the following, as it pertains to wastewater treatment and discharge:
 - i. Volume of waste and date(s) generated from treatment process;
 - ii. Volume of waste disposed of on-site or shipped off-site;
 - iii. Date(s) of disposal;
 - iv. Identity of hauler or transporter;
 - v. Location of disposal site; and
 - vi. Method of final disposal.

The above records shall be maintained on a monthly basis. The records shall be retained at the facility site and/or shall be readily available for review by authorized representatives of the TCEQ for at least five years.
12. For industrial facilities to which the requirements of 30 TAC Chapter 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with Chapter 361 of the Health and Safety Code of Texas.

TCEQ Revision 3/2000

OTHER REQUIREMENTS

1. Violations of daily maximum limitations for the following pollutants shall be reported orally to TCEQ Region 5, within 24 hours from the time the permittee becomes aware of the violation followed by a written report within five days:

<u>POLLUTANT</u>	<u>MAL (mg/L)</u>
Copper (Total)	0.010
Selenium (Total)	0.010

Test methods utilized to determine compliance with the permit limitations shall be sensitive enough to detect the parameters listed above at the minimum analytical level (MAL). Permit compliance/noncompliance determinations will be based on the effluent limitations contained in this permit with consideration given to the MAL for toxic organic and toxic inorganic parameters. When an analysis of an effluent sample for these parameters results in a measurement of less than the MAL, that parameter shall be reported as "< (MAL value)" and this shall be interpreted as a value of zero (0) for compliance purposes.

2. There shall be no discharge of polychlorinated biphenyl transformer fluid.

3. DEFINITIONS

- A. The term "10-year, 24-hour rainfall event" shall mean a rainfall event with the probable recurrence interval of once in ten years as defined by the National Weather Service in Technical Paper No. 40, "Rainfall Frequency Atlas of the United States," May 1961, and subsequent amendments, or equivalent regional or state rainfall event and facility design, construction, and operation resides with the permittee.
- B. The term "total residual chlorine" (or total residual oxidants for intake water with bromides) means the value obtained using the amperometric method for total residual chlorine described in 40 CFR Part 136. The permittee may use the DPD spectrophotometric method (EPA Method 330.5) upon written notification of the Executive Director, provided that EPA has modified the existing effluent limitation guidelines (40 CFR Part 423) or has provided the permittee with documentation that this new test method is appropriate for use by steam electric power generating facilities.

Total residual chlorine may not be discharged from any single generating unit for more than two hours per day unless the discharger demonstrates to the permitting authority that discharge for more than two hours is required for macroinvertebrate control.

Simultaneous multi-unit chlorination is permitted.

- C. The term "metal cleaning waste" means any wastewater resulting from cleaning (with or without chemical compounds) any metal process equipment including, but not limited to, boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning.

The term "chemical metal cleaning waste" means any wastewater resulting from the cleaning of any metal process equipment with chemical compounds, including, but not limited to, boiler tube cleaning.

- D. The term "low volume waste sources" includes "utility waste waters" and "water treatment wastes". "Utility waste waters" include, but are not limited to: wet scrubber air pollution control systems, evaporator blowdown, boiler blowdown, laboratory and sampling streams, floor drainage, cooling tower basin cleaning wastes, and blowdown from recirculating house service water systems. "Water treatment wastes" include, but are not limited to: ion exchange water treatment system wastes, demineralizer

backwash, cold lime water treatment wastes, reverse osmosis waste, and water treatment system filter backwash. Sanitary and air conditioning wastes are not included.

- E. The term "once through cooling water" means water passed through the main cooling condensers in one or two passes for the purpose of removing waste heat.
- F. The term "ash transport water" shall mean water used in the transport of either fly ash or bottom ash.
- G. The term "coal pile runoff" means the rainfall runoff from or through any coal, ash, or other material storage pile.

Any untreated overflow from facilities designed, constructed, and operated to treat the volume of "coal pile runoff" which is associated with a 10-year, 24-hour rainfall event shall not be subject to the limitations specified on page 2d of this permit. The burden of proof regarding the rainfall event and facility design, construction, and operation resides with the permittee.

- 4. This provision supersedes and replaces Provision 1, Paragraph 1 of Monitoring and Reporting Requirements found on Page 4 of this permit.

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 - 319.12. Unless otherwise specified, a monthly effluent report shall be submitted each month, to the location(s) specified on the reporting form or the instruction sheet, by the 25th day of the following month for each discharge which is described by this permit whether or not a discharge is made for that month. Monitoring results must be reported on the approved TPDES self-report form, Discharge Monitoring Report (DMR) Form EPA No. 3320-1, signed and certified as required by Monitoring and Reporting Requirements No. 10.

5. PONDS

- A. The following table describes the ponds recognized through this permit:

Pond No.	Wastewater Type	Associated Outfall	Surface Area (Acres)	Capacity (Acre/ft)	Liner Type
Lignite Runoff Pond	Storm water from the lignite storage area (coal pile runoff)	003	5.18	28.59	Clay
FGD/Fly Ash Landfill Pond	Storm water from the FGD/Fly ash landfill, wastes from the Lignite Runoff Pond	004	12.88	25.0	Clay
Limestone Runoff Pond	Storm water from the limestone storage area	005	3.22	8.74	Clay
Ash Pond	Ash transport water, low volume wastes (boiler blowdown and demineralizer regenerant)	006	71.76	187.97	Clay
Metal Cleaning Waste Pond	Metal cleaning wastes and chemical metal cleaning wastes	N/A	2.42	11.96	Clay

- B. The Metal Cleaning Waste Pond may contain metal cleaning waste and may be used for temporary storage of storm water from the lignite storage area (coal pile runoff) and storm water from the FGD/Fly ash landfill. Wastewater held in this pond may be routed to Plant "X" for treatment. Other wastes may be routed to this pond with prior approval from the Executive Director.
- C. Wastewater from any of the following ponds: Lignite Runoff Pond, FGD/Fly Ash Landfill Pond, Limestone Runoff Pond, Ash Pond, Metal Cleaning Waste Pond, and surge pond may be recycled to the flue gas desuphurization system for use as a process wastewater.
- D. After December 31, 1999 all newly constructed process wastewater ponds shall be lined in compliance with one of the following requirements:
1. Soil Liner: The soil liner shall contain at least 3 feet of clay-rich (liquid limit greater than or equal to 30 and plasticity index greater than or equal to 15) soil material along the sides and bottom of the pond compacted in lifts of no more than 9 inches, to 95% standard proctor density at the optimum moisture content to achieve a permeability equal to or less than 1×10^{-7} cm/sec.
 2. Plastic/Rubber Liner: The liner shall be either a plastic or rubber membrane liner at least 30 mils in thickness which completely covers the sides and the bottom of the pond and which is not subject to degradation due to reaction with wastewater with which it will come into contact. If this lining material is vulnerable to ozone or ultraviolet deterioration it should be covered with a protective layer of soil of at least 6 inches. A leak detection system is also required.
 3. Alternate Liner: The permittee shall submit plans for any other pond lining method. Pond liner plans must be approved in writing by the Executive Director of the Texas Commission on Environmental Quality prior to pond construction.

The permittee shall notify the Texas Commission on Environmental Quality Regional Office upon completion of construction of the pond and at least a week prior to its use. Certification of the lining specifications shall be provided by a Texas licensed professional engineer and shall be available for inspection by TCEQ personnel upon request. For new construction, the certification and the test results of soils forming the bottom and sides of the pond shall be submitted to the TCEQ, Wastewater Permitting Section (MC-148) and Regional Office for review prior to discharging any wastewaters into the ponds. Permeability tests shall be made with material typical of the expected use.

- E. All wastewater retention ponds shall be operated in such a manner as to maintain a minimum freeboard of two feet.

6. PLANT "X"

The permittee is authorized to discharge treated wastewater from Plant "X" via Outfall 202, subject to effluent limitations, monitoring requirements, and other conditions listed on page 2b of this permit. Plant "X" may receive the following wastes for treatment and disposal via Outfall 202: metal cleaning wastes, chemical metal cleaning wastes, wastewater from the Lignite Runoff Pond (coal pile runoff), wastewater from the Ash Pond (ash transport water, low volume wastes consisting of boiler blowdown and demineralizer regenerant), storm water from the FGD/Fly ash landfill. Other wastes may be treated at Plant "X" with prior approval from the Executive Director.

7. MIXING ZONE DEFINITIONS

Chronic toxic criteria apply at the edge of the mixing zone. The mixing zone for Outfall 002 is defined as a volume of water within a radius of 200 feet extending over the receiving water from the point where the discharge reaches Brandy Branch Reservoir.

For Outfall 006, there is no mixing zone established for this discharge to an intermittent stream. Acute toxic criteria apply at the point of discharge.

8. Monitoring results shall be provided at the intervals specified in the permit. For pollutants which are monitored annually, effluent reports shall be submitted in September of each year. For pollutants which are monitored four times per year, the first effluent report shall be submitted three months after the date of permit issuance and subsequent reports every three months thereafter.

9. SELENIUM MONITORING PROGRAM

The permittee shall comply with all necessary sampling requirements in the Selenium Monitoring Program as approved by the Executive Director. Revisions to the Selenium Monitoring Program must be approved by the Water Quality Assessment Team (MC-150), Water Quality Division, TCEQ prior to initiating any modifications.

10. There shall be no discharge of domestic sewage. All domestic sewage shall be routed off-site for treatment and disposal.
11. This requirement is applicable to the treatment and disposal of domestic wastewater at Outfall 302 only.

On-site disposal of sewage sludge is not authorized. The permittee shall ensure that all sewage sludge which is not a hazardous waste (as defined in 30 TAC Chapter 335) is handled, transported, and disposed of in compliance with the applicable provisions of 30 TAC Chapter 312. The permittee shall ensure that all sewage sludge which is a hazardous waste (as defined in 30 TAC Chapter 335) is handled, transported, and disposed of in compliance with the applicable provisions of 30 TAC Chapter 335. The permittee shall keep records of all sludges removed from the wastewater treatment plant site. Such records will include the following information:

- a. Volume (dry weight basis) of sludge disposed
- b. Date of disposal
- c. Identity and registration number of hauler
- d. Location and registration or permit number of disposal site
- e. Method of final disposal

The above records shall be maintained on a monthly basis and be available at the plant site for inspection by authorized representatives of the Texas Commission on Environmental Quality for at least five years.

12. SCHEDULE OF COMPLIANCE FOR WATER QUALITY BASED EFFLUENT LIMITS

The permittee shall comply with the following schedule of activities for the attainment of water quality-based final effluent limitations for total selenium at Outfall 006:

- a. Determine exceedance cause(s);
- b. Develop control options;
- c. Evaluate and select control mechanisms;

- d. Implement corrective action; and
- e. Attain final effluent limitations no later than 2 years, 365 days from the date of permit issuance.

The permittee shall submit quarterly progress reports in accordance with the following schedule. The requirement to submit quarterly progress reports shall expire 2 years, 365 days from the date of permit issuance.

PROGRESS REPORT DATE

January 1
April 1
July 1
October 1

The quarterly progress reports shall include a discussion of the interim requirements that have been completed at the time of the report and shall address the progress towards attaining the water quality-based final effluent limitations for total selenium at Outfall 001 no later than 2 years, 365 days from the date of permit issuance.

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date. Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

All reports shall be submitted to the Region 5 Office and to the Water Quality Compliance Monitoring Team (MC 224), Enforcement Division of the TCEQ.

CHRONIC BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this Section apply to Outfall 002 for whole effluent toxicity testing (biomonitoring).

1. Scope, Frequency and Methodology

- a. The permittee shall test the effluent for toxicity in accordance with the provisions below. Such testing will determine if an appropriately dilute effluent sample adversely affects the survival, reproduction, or growth of the test organism(s). Toxicity is herein defined as a statistically significant difference at the 95% confidence level between the survival, reproduction, or growth of the test organism(s) in a specified effluent dilution compared to the survival, reproduction, or growth of the test organism(s) in the control (0% effluent).
- b. The permittee shall conduct the following toxicity tests utilizing the test organisms, procedures and quality assurance requirements specified in this Part of the permit and in accordance with "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013), or the most recent update thereof:
 - 1) Chronic static renewal survival and reproduction test using the water flea (*Ceriodaphnia dubia*) (Method 1002.0 or the most recent update thereof). This test should be terminated when 60% of the surviving adults in the control produce three broods. This test shall be conducted once per six months.
 - 2) Chronic static renewal 7-day larval survival and growth test using the fathead minnow (*Pimephales promelas*) (Method 1000.0 or the most recent update thereof). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per six months.

The permittee must perform and submit a valid test for each test species during the required reporting period for that species. The repeat test shall include the control and all effluent dilutions and use the appropriate number of organisms and replicates, as specified above or in the referenced methods. An invalid test is herein defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

- c. The permittee shall use five effluent dilution concentrations and a control in each toxicity test. These additional effluent concentrations are 32%, 42%, 56%, 75%, and 100% effluent. The critical dilution, defined as 100% effluent, is the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions.
- d. This permit may be amended to require a Whole Effluent Toxicity (WET) limit, Chemical-Specific (CS) limits, a Best Management Practice (BMP), additional toxicity testing, and/or other appropriate actions to address toxicity. The permittee may be required to conduct additional biomonitoring tests and/or a Toxicity Reduction Evaluation (TRE) if biomonitoring data indicate multiple numbers of unconfirmed toxicity events.

2. Required Toxicity Testing Conditions

- a. Test Acceptance - The permittee shall repeat any toxicity test, including the control and all effluent dilutions, which fails to meet any of the following criteria:
 - 1) a control mean survival of 80% or greater;

- 2) a control mean number of water flea neonates per surviving adult of 15 or greater;
- 3) a control mean dry weight of surviving fathead minnow larvae of 0.25 mg or greater;
- 4) a control Coefficient of Variation percent (CV%) of 40 or less in between replicates for the young of surviving females in the water flea reproduction and survival test; and the growth and survival endpoints in the fathead minnow growth and survival test.
- 5) a critical dilution CV% of 40 or less for young of surviving females in the water flea reproduction and survival test; and the growth and survival endpoints for the fathead minnow growth and survival test. However, if statistically significant lethal or nonlethal effects are exhibited at the critical dilution, a CV% greater than 40 shall not invalidate the test.

b. Statistical Interpretation

- 1) If the conditions of test acceptability are met and the survival of the test organism is equal to or greater than 80% in the critical dilution and all dilutions below that, the test shall be considered a passing test. The permittee shall report a No Observed Effect Concentration (NOEC) of not less than the critical dilution for the reporting requirements. The NOEC is defined as the greatest effluent dilution at or below which no significant lethality is demonstrated. Significant lethality is defined as a statistically significant difference, at the 95% confidence level, between the survival of the test organism in a specified effluent dilution when compared to the survival of the test organism in the control.
- 2) For the water flea survival test, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be Fisher's Exact Test as described in the "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013), or the most recent update thereof.
- 3) For the water flea reproduction test and the fathead minnow larval survival and growth tests, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be in accordance with the methods for determining the NOEC as described in the "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013), or the most recent update thereof.

c. Dilution Water

- 1) Dilution water used in the toxicity tests shall be the receiving water collected as close as possible to the discharge point, but unaffected by the discharge.
- 2) Where the receiving water proves unsatisfactory as a result of preexisting instream toxicity (i.e. fails to fulfill the test acceptance criteria of item 2.a.), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:
 - a) a synthetic lab water control was performed (in addition to the receiving water control) which fulfilled the test acceptance requirements of item 2.a;
 - b) the test indicating receiving water toxicity was carried out to completion (i.e., 7 days);
 - c) the permittee submitted all test results indicating receiving water toxicity with the reports and information required in Part 3 of this Section.

The synthetic dilution water shall have a pH, hardness, and alkalinity similar to that of the receiving water or a natural water in the drainage basin that is unaffected by the discharge, provided the magnitude of these parameters will not cause toxicity in a synthetic dilution water control that has been formulated to match the pH, hardness, and alkalinity naturally found in the receiving water. Upon approval, the permittee may substitute other appropriate dilution water with chemical and physical characteristics similar to that of the receiving water.

d. Samples and Composites

- 1) The permittee shall collect a minimum of three flow-weighted 24-hour composite samples from Outfall 002. The second and third 24-hour composite samples will be used for the renewal of the dilution concentrations for each toxicity test. A 24-hour composite sample consists of a minimum of 12 effluent portions collected at equal time intervals representative of a 24-hour operating day and combined proportionally to flow, or a sample continuously collected proportionally to flow over a 24-hour operating day.
- 2) The permittee shall collect the 24-hour composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance discharged on an intermittent basis.
- 3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the first 24-hour composite sample. The holding time for any subsequent 24-hour composite sample shall not exceed 72 hours. Samples shall be maintained at a temperature of 4 degrees Centigrade during collection, shipping, and storage.
- 4) If flow from the outfall being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions, and the sample holding time, are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume sufficient to complete the required toxicity tests with daily renewal of the effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in Part 3 of this Section.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in any Part of this Section shall be submitted to the attention of the Water Quality Assessment Team (MC 150) of the Water Quality Division.

- a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this permit in accordance with the Report Preparation Section of "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013), or the most recent update thereof, for every valid and invalid toxicity test initiated whether carried to completion or not. All full reports shall be retained for 3 years at the plant site and shall be available for inspection by TCEQ personnel.
- b. A full report must be submitted with the first valid biomonitoring test results for each test species and with the first test results any time the permittee subsequently employs a different test laboratory. Full reports need not be submitted for subsequent testing unless specifically requested. The permittee shall routinely report the results of each biomonitoring test on the Table 1 forms provided with this permit. All Table 1 reports must include the information specified in the Table 1 form attached to this permit.

- 1) Annual biomonitoring test results are due on or before January 20th for biomonitoring conducted during the previous 12 month period.
 - 2) Semiannual biomonitoring test results are due on or before July 20th and January 20th for biomonitoring conducted during the previous 6 month period.
 - 3) Quarterly biomonitoring test results are due on or before April 20th, July 20th, October 20th, and January 20th, for biomonitoring conducted during the previous calendar quarter.
 - 4) Monthly biomonitoring test results are due on or before the 20th day of the month following sampling.
- c. Enter the following codes on the DMR for the appropriate parameters for valid tests only:
- 1) For the water flea, Parameter TLP3B, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
 - 2) For the water flea, Parameter TOP3B, report the NOEC for survival.
 - 3) For the water flea, Parameter TPP3B, report the NOEC for reproduction.
 - 4) For the fathead minnow, Parameter TLP6C, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
 - 5) For the fathead minnow, Parameter TOP6C, report the NOEC for survival.
 - 6) For the fathead minnow, Parameter TPP6C, report the NOEC for growth.
- d. Enter the following codes on the DMR for retests only:
- 1) For retest number 1, Parameter 22415, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
 - 2) For retest number 2, Parameter 22416, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

4. Persistent Lethality

The requirements of this Part apply only when a toxicity test demonstrates significant lethality at or below the critical dilution. Significant lethality is defined as a statistically significant difference, at the 95% confidence level, between the survival of the test organism in a specified effluent dilution when compared to the survival of the test organism in the control.

- a. The permittee shall conduct a total of two additional tests (retests) for any species that demonstrates significant lethality at or below the critical dilution. The two retests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two retests in lieu of routine toxicity testing. All reports shall be submitted within 20 days of test completion. Test completion is defined as the last day of the test. The retests shall also be reported on the DMRs as specified in Part 3.d.
- b. If one or both of the two retests specified in item 4.a. demonstrates significant lethality at or below the critical dilution, the permittee shall initiate the TRE requirements as specified in Part 5.

- c. The provisions of item 4.a. are suspended upon completion of the two retests and submittal of the TRE Action Plan and Schedule defined in Part 5 of this Section.

5. Toxicity Reduction Evaluation

- a. Within 45 days of the last test day of the retest that confirms significant lethality at or below the critical dilution, the permittee shall submit a General Outline for initiating a TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and/or effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.
- b. Within 90 days of the last test day of the retest that confirms significant lethality at or below the critical dilution, the permittee shall submit a TRE Action Plan and Schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is a step-wise investigation combining toxicity testing with physical and chemical analysis to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE Action Plan shall lead to the successful elimination of significant lethal effects at the critical dilution for both test species defined in item 1.b. As a minimum, the TRE Action Plan shall include the following:
 - 1) Specific Activities - The TRE Action Plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and/or alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled, "Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I" (EPA/600/6-91/005F), or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled, "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;
 - 2) Sampling Plan - The TRE Action Plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/ identification/ confirmation procedures, and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity;
 - 3) Quality Assurance Plan - The TRE Action Plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, as well as mechanisms to detect artifactual toxicity; and
 - 4) Project Organization - The TRE Action Plan should describe the project staff, project manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.
- c. Within 30 days of submittal of the TRE Action Plan and Schedule, the permittee shall implement the TRE with due diligence.

- d. The permittee shall submit quarterly TRE Activities Reports concerning the progress of the TRE. The quarterly reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:
- 1) results and interpretation of any chemical specific analyses for the identified and/or suspected pollutant(s) performed during the quarter;
 - 2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;
 - 3) any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;
 - 4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;
 - 5) any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution; and
 - 6) any changes to the initial TRE Plan and Schedule that are believed necessary as a result of the TRE findings.

Copies of the TRE Activities Report shall also be submitted to the U.S. EPA Region 6 office.

- e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species; testing for the less sensitive species shall continue at the frequency specified in Part 1.b. If the effluent ceases to effect significant lethality (herein as defined below) the permittee may end the TRE. A "cessation of lethality" is defined as no significant lethality at the critical dilution for a period of 12 consecutive months with at least monthly testing. At the end of the 12 months, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b.

This provision does not apply as a result of corrective actions taken by the permittee. "Corrective actions" are herein defined as proactive efforts which eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and/or effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, then this permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing the WET limit, in lieu of an alternate toxicity control measure, by identifying and confirming the toxicant and/or an appropriate control measure.

- f. The permittee shall complete the TRE and submit a Final Report on the TRE Activities no later than 28 months from the last test day of the retest that confirmed significant lethal effects at the critical dilution. The permittee may petition the Executive Director (in writing) for an extension of the 28-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE. The report shall provide information pertaining to the specific control mechanism(s) selected that will, when implemented, result in reduction of effluent toxicity to no significant lethality at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism(s). A copy of the TRE Final Report shall also be submitted to the U.S. EPA Region 6 office.

- g. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements where necessary, to require a compliance schedule for implementation of corrective actions, to specify a WET limit, to specify a BMP, and/or to specify Chemical-Specific (CS) limits.

TABLE 1 (SHEET 1 OF 4)

BIOMONITORING REPORTING

CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION

Dates and Times
Composites
Collected

No. 1	FROM: _____	TO: _____
No. 2	FROM: _____	TO: _____
No. 3	FROM: _____	TO: _____

Test initiated: _____ am/pm _____ date

Dilution water used: _____ Receiving Water _____ Synthetic Dilution Water

NUMBER OF YOUNG PRODUCED PER ADULT AT END OF TEST

REP	Percent effluent (%)					
	0%	32%	42%	56%	75%	100%
A						
B						
C						
D						
E						
F						
G						
H						
I						
J						
Surviv. Mean						
Total Mean						
CV%*						

*coefficient of variation = standard deviation x 100/mean (calculation based on young of the surviving adults)

Designate males (M), and dead females (D), along with number of neonates (x) released prior to death.

TABLE 1 (SHEET 2 OF 4)

BIOMONITORING REPORTING

CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION TEST

1. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean number of young produced per adult significantly less ($p=0.05$) than the number of young per adult in the control for the % effluent corresponding to significant nonlethal effects?

CRITICAL DILUTION (100%): _____ YES _____ NO

PERCENT SURVIVAL

	Percent effluent (%)					
Time of Reading	0%	32%	42%	56%	75%	100%
24h						
48h						
End of Test						

2. Fisher's Exact Test:

Is the mean survival at test end significantly less ($p=0.05$) than the control survival for the % effluent corresponding to lethality?

CRITICAL DILUTION (100%): _____ YES _____ NO

3. Enter percent effluent corresponding to each NOEC below :

a.) NOEC survival = _____ % effluent

b.) NOEC reproduction = _____ % effluent

FATHEAD MINNOW LARVAE GROWTH AND SURVIVAL

Dilution water used: _____ Receiving Water _____ Synthetic Dilution Water

Effluent Concentration (%)	Average Dry Weight in milligrams in replicate chambers					Mean Dry Weight	CV%*
	A	B	C	D	E		
0%							
32%							
42%							
56%							
75%							
100%							

CRITICAL DILUTION (100%): YES NO

TABLE 1 (SHEET 4 OF 4)

BIOMONITORING REPORTING

FATHEAD MINNOW GROWTH AND SURVIVAL TEST

FATHEAD MINNOW SURVIVAL DATA

Effluent Concentration (%)	Percent Survival in replicate chambers					Mean percent survival			CV %*
	A	B	C	D	E	24h	48h	7 day	
0%									
32%									
42%									
56%									
75%									
100%									

* coefficient of variation = standard deviation x 100/mean

2. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the control survival for the % effluent corresponding to lethality?

CRITICAL DILUTION (100%): _____ YES _____ NO

3. Enter percent effluent corresponding to each NOEC below:

a.) NOEC survival = _____ % effluent

b.) NOEC growth = _____ % effluent

24-HOUR ACUTE BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this Section apply individually and separately to Outfall 002 for whole effluent toxicity testing (biomonitoring). No samples or portions of samples from one outfall may be composited with samples or portions of samples from another outfall.

1. Scope, Frequency and Methodology

- a. The permittee shall test the effluent for lethality in accordance with the provisions in this Section. Such testing will determine compliance with the Surface Water Quality Standard, 30 TAC §307.6(e)(2)(B), of greater than 50% survival of the appropriate test organisms in 100% effluent for a 24-hour period.
- b. The toxicity tests specified shall be conducted once per six months. The permittee shall conduct the following toxicity tests utilizing the test organisms, procedures, and quality assurance requirements specified in this section of the permit and in accordance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition" (EPA-821-R-02-012), or the most recent update thereof:
 - 1) Acute 24-hour static toxicity test using the water flea (*Daphnia pulex*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution.
 - 2) Acute 24-hour static toxicity test using the fathead minnow (*Pimephales promelas*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution.

A valid test result must be submitted for each reporting period. The permittee must report, then repeat, an invalid test during the same reporting period. The repeat test shall include the control and all effluent dilutions and use the appropriate number of organisms and replicates, as specified above. An invalid test is herein defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

- c. In addition to an appropriate control, a 100% effluent concentration shall be used in the toxicity tests. Except as discussed in item 2.b., the control and/or dilution water shall consist of a standard, synthetic, moderately hard, reconstituted water.
- d. This permit may be amended to require a Whole Effluent Toxicity (WET) limit, a Best Management Practice (BMP), Chemical-Specific (CS) limits, additional toxicity testing, and/or other appropriate actions to address toxicity. The permittee may be required to conduct additional biomonitoring tests and/or a Toxicity Reduction Evaluation (TRE) if biomonitoring data indicate multiple numbers of unconfirmed toxicity events.
- e. As the biomonitoring dilution series specified in the Chronic biomonitoring requirements includes a 100% effluent concentration, those results fulfill the requirements of this Section. The results of any test with a 100% effluent concentration performed in the proper time interval may be substituted in lieu of performing a separate 24-hour acute test. Compliance will be evaluated as specified in Item a. The greater than 50% survival in 100% effluent for a 24-hour period standard applies to all tests utilizing a 100% dilution, regardless of whether the results are submitted to comply with the minimum testing frequency defined in Item b.

2. Required Toxicity Testing Conditions

- a. Test Acceptance - The permittee shall repeat any toxicity test, including the control, if the control fails to meet a mean survival equal to or greater than 90%.
- b. Dilution Water - In accordance with item 1.c., the control and/or dilution water shall normally consist of a standard, synthetic, moderately hard, reconstituted water. If the permittee utilizes the results of a 48-Hour Acute test or a Chronic test to satisfy the requirements in item 1.e., the permittee may use the receiving water or dilution water that meets the requirements of item 2.a. as the control and dilution water.
- c. Samples and Composites
 - 1) The permittee shall collect one flow-weighted 24-hour composite sample from Outfall 002. A 24-hour composite sample consists of a minimum of 12 effluent portions collected at equal time intervals representative of a 24-hour operating day and combined proportional to flow, or a sample continuously collected proportional to flow over a 24-hour operating day.
 - 2) The permittee shall collect the 24-hour composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance discharged on an intermittent basis.
 - 3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the 24-hour composite sample. Samples shall be maintained at a temperature of 4 degrees Centigrade during collection, shipping, and storage.
 - 4) If the Outfall ceases discharging during the collection of the effluent composite sample, the requirements for the minimum number of effluent portions are waived. However, the permittee must have collected a composite sample volume sufficient for completion of the required test. The abbreviated sample collection, duration, and methodology must be documented in the full report required in Part 3 of this Section.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in any Part of this Section shall be submitted to the attention of the Water Quality Assessment Team (MC 150) of the Water Permits and Resource Management Division.

- a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this permit in accordance with the Report Preparation Section of "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition" (EPA-821-R-02-012), or the most recent update thereof, for every valid and invalid toxicity test initiated. All full reports shall be retained for three years at the plant site and shall be available for inspection by TCEQ personnel.
- b. A full report must be submitted with the first valid biomonitoring test results for each test species and with the first test results any time the permittee subsequently employs a different test laboratory. Full reports need not be submitted for subsequent testing unless specifically requested. The permittee shall routinely report the results of each biomonitoring test on the Table 2 forms

provided with this permit. All Table 2 reports must include the information specified in the Table 2 form attached to this permit.

- 1) Semiannual biomonitoring test results are due on or before January 20th and July 20th for biomonitoring conducted during the previous 6 month period.
 - 2) Quarterly biomonitoring test results are due on or before January 20th, April 20th, July 20th, and October 20th, for biomonitoring conducted during the previous calendar quarter.
- c. Enter the following codes on the DMR for the appropriate parameters for valid tests only:
- 1) For the water flea, Parameter TIE3D, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."
 - 2) For the fathead minnow, Parameter TIE6C, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."
- d. Enter the following codes on the DMR for retests only:
- 1) For retest number 1, Parameter 22415, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."
 - 2) For retest number 2, Parameter 22416, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."

4. Persistent Mortality

The requirements of this Part apply when a toxicity test demonstrates significant lethality, here defined as a mean mortality of 50% or greater to organisms exposed to the 100% effluent concentration after 24-hours.

- a. The permittee shall conduct two additional tests (retests) for each species that demonstrates significant lethality. The two retests shall be conducted once per week for two weeks. Five effluent dilution concentrations in addition to an appropriate control shall be used in the retests. These additional effluent concentrations are 6%, 13%, 25%, 50% and 100% effluent. The first retest shall be conducted within 15 days of the laboratory determination of significant lethality. All test results shall be submitted within 20 days of test completion of the second retest. Test completion is defined as the 24th hour. The retests shall also be reported on the DMRs as specified in Part 3.d.
- b. If one or both of the two retests specified in item 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5 of this Section.

5. Toxicity Reduction Evaluation

- a. Within 45 days of the retest that demonstrates significant lethality, the permittee shall submit a General Outline for initiating a TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent

and/or effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.

- b. Within 90 days of the retest that demonstrates significant lethality, the permittee shall submit a TRE Action Plan and Schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is a step-wise investigation combining toxicity testing with physical and chemical analysis to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE Action Plan shall lead to the successful elimination of significant lethality for both test species defined in item 1.b. As a minimum, the TRE Action Plan shall include the following:
- 1) Specific Activities - The TRE Action Plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and/or alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled, "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA/600/6-91/003), or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled, "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;
 - 2) Sampling Plan - The TRE Action Plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/identification/confirmation procedures, and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity;
 - 3) Quality Assurance Plan - The TRE Action Plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, as well as mechanisms to detect artifactual toxicity; and
 - 4) Project Organization - The TRE Action Plan should describe the project staff, project manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.
- c. Within 30 days of submittal of the TRE Action Plan and Schedule, the permittee shall implement the TRE with due diligence.

- d. The permittee shall submit quarterly TRE Activities Reports concerning the progress of the TRE. The quarterly TRE Activities Reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:
- 1) results and interpretation of any chemical-specific analyses for the identified and/or suspected pollutant(s) performed during the quarter;
 - 2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;
 - 3) any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;
 - 4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;
 - 5) any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to eliminate significant lethality; and
 - 6) any changes to the initial TRE Plan and Schedule that are believed necessary as a result of the TRE findings.

Copies of the TRE Activities Report shall also be submitted to the U.S. EPA Region 6 office.

- e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species; testing for the less sensitive species shall continue at the frequency specified in Part 1.b. If the effluent ceases to effect significant lethality (herein as defined below) the permittee may end the TRE. A "cessation of lethality" is defined as no significant lethality at the critical dilution for a period of 12 consecutive weeks with at least weekly testing. At the end of the 12 weeks, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b.

This provision does not apply as a result of corrective actions taken by the permittee. "Corrective actions" are herein defined as proactive efforts which eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and/or effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, then this permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing the WET limit, in lieu of an alternate toxicity control measure, by identifying and confirming the toxicant and/or an appropriate control measure.

- f. The permittee shall complete the TRE and submit a Final Report on the TRE Activities no later than 18 months from the last test day of the retest that demonstrates significant lethality. The permittee may petition the Executive Director (in writing) for an extension of the 18-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE. The report shall specify the control mechanism(s) that will, when implemented, reduce

effluent toxicity as specified in item 5.g. The report will also specify a corrective action schedule for implementing the selected control mechanism(s). A copy of the TRE Final Report shall also be submitted to the U.S. EPA Region 6 office.

- g. Within three years of the last day of the test confirming toxicity, the permittee shall comply with 30 TAC 307.6.(e)(2)(B), which requires greater than 50% survival of the test organism in 100% effluent at the end of 24-hours. The permittee may petition the Executive Director (in writing) for an extension of the 3-year limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE.

The requirement to comply with 30 TAC 307.6.(e)(2)(B) may be exempted upon proof that toxicity is caused by an excess, imbalance, or deficiency of dissolved salts. This exemption excludes instances where individually toxic components (e.g. metals) form a salt compound. Following the exemption, the permit may be amended to include an ion-adjustment protocol, alternate species testing, or single species testing.

- h. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements where necessary, to require a compliance schedule for implementation of corrective actions, to specify a WET limit, to specify a BMP, and/or to specify a Chemical-Specific (CS) limit(s).

TABLE 2 (SHEET 1 OF 2)

WATER FLEA SURVIVAL

GENERAL INFORMATION

	Time (am/pm)	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN*						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 (Daphnia or Ceriodaphnia) = _____ % effluent
(circle appropriate genus)

95% confidence limits: _____

Method of LC50 calculation: _____

* If 24-hour survivorship data from the chronic Ceriodaphnia dubia test is being used, the mean survival per dilution for all 10 replicates shall be reported on this row.

TABLE 2 (SHEET 2 OF 2)

FATHEAD MINNOW SURVIVAL

GENERAL INFORMATION

	Time (am/pm)	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _____ % effluent

95% confidence limits: _____

Method of LC50 calculation: _____